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SOAP and SANITARY CHEMICALS

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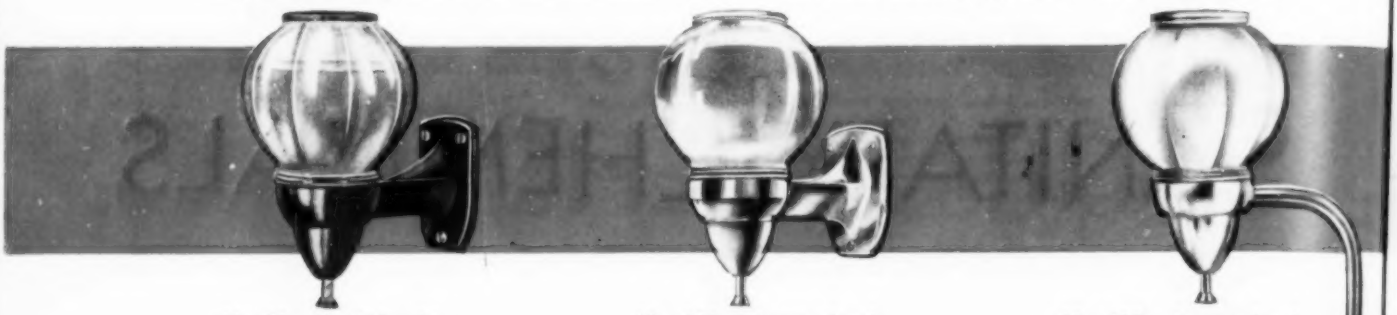
Specify Moore Dispensers in 1949 and you'll sell *more* soap

If you can sell the Dispensers, you can sell the Soap. That's why you should be sure to provide your customers with the most dependable dispensers on the market—the Moore dispensers.
Pictured are some of the models you can choose from. Moore also manufactures complete Gravity Systems—liquid or lather.

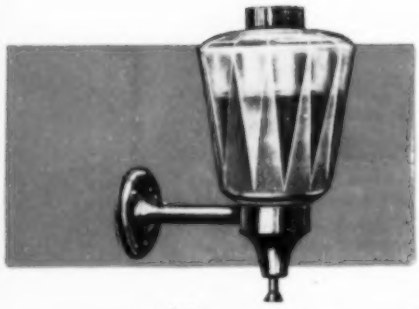


No. 50—plastic bracket

No. 100—chrome-plated metal bracket.

No. 105—chrome-plated brass slab bracket.

The improved Peer dispensers combine smooth operation with smart appearance. All working parts are made of brass. A vacuum controlled spring action valve releases any desired amount of soap. The heavy globe, made of clear "Duraglas", holds 12 ounces of liquid soap.
The mechanism is simply designed so that any part can be replaced in a few minutes by inexperienced hands. Peer dispensers sell at prices that, for their quality, are lower than any other dispensers on the market.



No. 200—with clear glass globe.

ATLAS #200 The top-fill Atlas is a dispenser that, though moderately priced, makes an attractive addition to the finest washroom. The clear globe is topped with a contrasting *black bakelite cap*. Uses a dependable mechanism with all working parts of brass. The globe holds 12 ounces of liquid soap. Available with glass or copper, chrome-plated globe.

No. 200—with copper, chrome-plated globe.

MOORE BROS. CO.
100 Warren St.
N.Y. 7, N.Y.

No. 400—with heavy glass globe.

#400 A Push-in soap dispenser designed for use in any size or type of washroom. It can be mounted on any wall. It has special Moore Patented features which prevent leaking. Will not stick or corrode. Heavy glass reservoir with plastic screw cap. The body will not corrode or stain. Easily the best looking and greatest value of any dispenser offered in "The Trade."

AS THE EDITOR SEES IT

IF manufacturers could induce the housewife to use their products in the manner intended, many a headache would be avoided both for the consumer and the maker. Refusal to follow label directions is a thoroughly ingrained American habit. Our observations indicate quite clearly that the percentage of those who read labels is small and the percentage of those who both read and follow directions for use of the product is even smaller. "Use a teaspoon to a gallon of water for washing painted woodwork and walls." But two or three times this quantity is used, woodwork is scrubbed vigorously, and after a few such treatments, off comes the paint. Mrs. Housewife's conclusion that the product is no good represents standard thinking in such a situation,— and she switches to something else.

But, we feel that this habit of not reading labels is not altogether the housewife's fault. The manufacturer may be responsible to a considerable degree because he too has some bad habits when it comes to labels. All too often, the label on Quince's Dream Girl Cleanser or any of its counterparts is covered three-quarters with a breath-taking description of what a superlative product Mrs. Housewife has just bought and is about to use. Actual how-to-use directions are generally in the very fine type down at the bottom which the lady has trouble deciphering even with her reading specs. The very design of the label makes it difficult to get at the needed facts. So, she takes a chance *her* way, gets poor results, and Quince's Dream Girl exits from her life.

Our guess is that once the product has been bought, it will speak for itself irrespective of all the gush and slush which can be crowded on the label by a manufacturer. Something has sold the product to the housewife, and she has already bought it. Therefore, why is it not good sense to forget the sales arguments on the label and concentrate on trying to encourage her to use the product correctly,—and stay sold? Maybe her habit of not reading labels grows out of too often finding sales drivel where she hoped to read some brief and helpful instructions for use.

THE renderers are reported to be exerting heavy pressure in Washington, acting this time through the House Small Business Committee, in an attempt to get export restrictions lifted on American tallow and grease. With European fat buyers bidding prices up on Argentine tallow, and coconut oil from the far East, domestic tallow producers see no particular justice in holding American tallow prices below the world market by the simple device of denying American producers access to this market.

Tallow producers are of course interested only in their own specific problem,—in this case how to get the maximum price for their output. They feel no particular concern for the weighty supply and demand considerations which face the international oil and fat jugglers. They simply want to see export controls abolished on their own product so they can get a higher price for it in the export field.

In a way we agree with them, and have the feeling that the sooner all such controls are abolished, the better off we will all be, and the sooner will the law of supply and demand be allowed to function in a normal way to restore a balance between production and consumption. But until *all* controls are abandoned, we feel that singling out one specific control for relaxation, while keeping the others, will inevitably be unfair to some interested parties and work a hardship on them. In the case in point it would be the American soap maker who would get it in the neck. The IEFC controls have resulted in giving to Europe some of the fat supplies which the American soaper normally counted on before the war. They have cut him off from a large part of his export market for soap. About the

only benefit he has had from the control program has been that he has been given first crack at domestic tallow and grease production. Now the renderers want this cut off.

DEMANDS from American industry, from the largest to the smallest firms, that the cement case decision and its resulting chaos in pricing methods be given quick attention by Congress when it meets next month, have become increasingly insistent. Right now, the number of companies who know exactly where they stand on prices and freight, whether they are or are not breaking the law, is small indeed. Are freight equalization and freight-paid sales both out the window for good? Must industry revamp its method of meeting competition which has been in vogue for a hundred years? Is Congress going to let this court-sustained FTC decision stand,—and if so exactly on what basis? A complete clarification by Congress cannot come too soon if industry has anything to say. The present uncertainty should be ended and no time lost by Congress in doing this.

SPECULATION as to the effect of the recent national election on business continues to bring forth a wide variety of opinion. That the new Congress will carry out its campaign promises at the expense of those who opposed its majority in the election by a high-tax, soak-business program of legislation is the view of some. Others maintain that the conservative elements in the final showdown will hold the balance of power and will stymie any radical extensions of new-deal legislation which surely would aggravate present inflation, handicap industry, and eventually bring a wide increase in unemployment. Those who believe that the new-deal crowd at least will attempt to put across a full-scale program while the opportunity appears to exist would seem to be supported by the evidence of the past sixteen years.

Those with connections in Washington do not appear optimistic that business can hope for too much consideration over the next four years. One view, that of a banker, could be significant. He maintains that the hundreds of corporation reports which over many months have shown a continuation of high earnings,—in some instances giving the impression of being excessively high,—will be the evidence used to damn business when the inevitable drive by labor for still higher wages again gets underway,—and also when the anticipated and revived excess profits tax comes before Congress. He also holds that these earning figures could be interpreted by those who might care to do so that industry *can* pay both higher wages and higher taxes, and still not be hurt too badly.

And there industry and business stand as they look forward to 1949 and the convening of the 81st Congress next month. Obviously, only a confirmed pollyanna could avoid having some misgivings under the circumstances.

AS soap selling gets tougher and competition for the housewife's dollar becomes keener, we note that manufacturers have returned in some numbers to the sales stimulants of pre-war days. Lately, it would appear that a veritable deluge of the old coupon offers of one package free with one purchased has descended upon us. Or maybe, it just seems like a deluge because so many years have passed since such methods were widely used. Or possibly our soap sales thinking still reflects the scarcities of former years, the take-it-or-leave-it attitude of retailers, and all the other sidelights of a rationed economy. But for the manufacturer who has watched his sales curve move steadily downward through most of 1948, the problem is no longer remote. It is here,— and the time-tested free coupon is apparently his estimate of the best solution.

Viewed coldly, these free coupon campaigns are in fact the equivalent of a price cut of anything from ten to twenty-five per cent depending upon product and conditions. Whether they are ever more than a shot-in-the-arm is debatable. The housewife merely has two packages to work off instead of one before repurchasing. The retailer must be refunded for the free coupon. While such type of sales stimulant may work wonders to introduce a new product, we have never been able to understand exactly where it has merit in connection with brands which have been on the market for years. A shot of benzedrine for sales,—at a cut price.

Photograph above shows a group of better known synthetics sold at retail.

The Retail Market for SYNTHETIC DETERGENTS

By
John W. McCutcheon

A GREAT deal of interest has been generated over the past several years in synthetic detergents and their uses, and a number of reports have been made on the subject. However, no report on the volume generated in the retail field has so far come to the author's attention. Statistics here are unusually scarce, so that whatever estimates are made must of necessity be taken with the proverbial grain of salt. A year or so ago, I was asked by a store keeper if I had seen the new Procter & Gamble "Dreft" that was just out. It probably came as quite a shock to him to learn that this product was not only an old one, but had actually been on the American market for over fourteen years to the author's sure knowledge and possibly longer. Although "Dreft" is probably America's oldest built synthetic detergent packaged for the retail trade, it is also true that little interest was developed in such products prior to 1938 when this particular product appeared for the first time in the 15th edition of the *Milwaukee Journal* Consumer Analysis Report.

By 1940, Colgate-Palmolive-Peet's competing product "Vel" was mentioned along with "Dreft" in the above report. The war years must be passed over lightly. Shortages of material, diversion of available supplies and changes in the price picture made many of these products virtually disappear from the market. Substitute products did appear, but they contained minimum detergent with maximum builder, and represented in the housewive's opinion, merely a stop gap, acceptable only because soap was so scarce. The poor packaging, harsh alkalis used and high prices brought such a reaction when soaps again appeared, that the market for such products dried up almost over night. Even well priced and good products were swept off the market without consideration.

With established products such as "Dreft" and "Vel" the story was

different. The quality of their products had not been lowered and, backed by national advertising, they more than held their own thru the war years, aided greatly by the rapid rise in fat and soap prices.

With a continued rise in fat costs through 1946 to date, plus a great increase in the volume of industrially available high quality synthetic detergents at a stable price, a great many small companies were encouraged to enter or re-enter the field; thus dozens of new synthetic detergents appeared in recent market surveys covering this field. However, consumers themselves often are not qualified to differentiate between true synthetic detergents and merely water softeners etc. so that the total number reported as being on the market may be on the high side. Also, products appear and disappear with considerable rapidity, which also tends to increase the number listed as against those available for purchase at any one time. For example, in a recent survey, only thirteen out of a total listed group of over thirty were found available, and of these, two were discarded as being primarily water softeners. The adjacent list of nearly eighty is probably representative of products which are or have been available within the past six months. Italicized products are nationally advertised and distributed. The others, except as mentioned, are for the most part concentrated in the hard water areas of the Mid-West.

"Swerl," made by National Aniline, Div. of Allied Chem. & Dye Corp. and distributed by H. J. Heinz Co. appeared about 1945. "Tide," (Procter & Gamble) and "Breeze" (Lever Bros. Co.) appeared in 1947. "All" manufactured by Monsanto Chem. Co. and distributed by Detergents Inc. appeared in 1947. "Surf" (Lever Bros. Co.) "Fab" (Colgate-Palmolive-Peet) and "Glim" (General Aniline & Film Corp.) in 1948. This last is one of the few detergents in liquid form on the market.

TO gain some idea of the possible sales share of these products, a few market survey reports will be studied. A word on these reports may be interesting: The *Milwaukee Journal* Consumer Analysis Report started in 1922 is the best known. Since then nine other papers representing a total of twelve cities have started similar surveys. Questions are co-ordinated as far as possible, so that comparisons may be made. In the present case we will draw on information from the 1948 Reports of *The Milwaukee Journal* and *The Columbus Dispatch*.

All	Nyleen
Bolton Cleaner	Nylon Dip
Breeze	O Gee
Castle	Perfex
Clauds	Powderene
Climalene	Pura Suds
Cook's	Purd
D 70	Radar
Dippy Du	Rain Drops
Dish-A-Du	Raleigh Cleaner
Doff	Savex
Dreft	Sing
Duall	Scoop**
Dyna Foam	Slitho Suds
Emprite	Smiling Scot
Ethyl	Snow Flake
Etsol Suds	Sotlax
Fab	Stanley
Fom	Suds Mor
Frisk	Sun Ray
Gentle Suds	*Surf*
Gently	Sutho Suds
Glim	Sweater Suds
Hazel	*Swerl*
Hy Pox	Tern
Jewel	*Tide*
Juno	Tops
Kenu	*Trend**
Lama Soap	Triax
Lan-O-Sheen	Trill
Lykasoap	Turco Tay
Magic Clean	Valco
Marshall	*Vel*
Marvene	Water Wetter
Mione	Wetalene
Mist-Tex	White House
Mystic Foam	Wonder Bubbles
New	Wool Foam
Neo-Suds	Zippy Suds
Nealorine	

* Mid West & West Coast
** East Coast

To the question "Do you buy any quick-sudsing synthetic soap products? (soapless suds), 47,012 (44.5%) familes in Columbus said "yes," and 58,633 (55.5%) said "no." In 1947 only 40.7% answered "yes" to the above question. This upward trend is characteristic of all reports studied. The breakdown by brand preference is given below, reproduced through the courtesy of *The Columbus Dispatch*.

Brand	*Percentage of all families buying quick-sudsing synthetic soap products who use each brand.* 1948	1947
Tide	33.2%	
Dreft	26.6	54.3%
Vel	20.2	20.7
Swerl	5.3	9.3
**Wetalene	4.4	4.8
**Spic & Span	4.1	3.2
*All	1.1	—
**Salvarine	1.1	1.3
†Miscellaneous	4.0	4.9

* Used by less than 1% last year and therefore included under miscellaneous last year.
** Synthetic all-purpose cleaners.
† Including all brands used by less than 1% of the total consumers of Quick Sudsing Synthetic Soap.
Total brands in use 33 (1948) and 35 (1947).

To the same question, 124,984 families in Milwaukee answered "Yes" in 1948 (52.3%) and 113,992 said "No" (47.7%). In 1947 only 43.7% said "Yes" and in 1946 only 25.5%. The breakdown of brand preference is given below through the courtesy of *The Milwaukee Journal*.

Brand	*Percentage of all families buying quick-sudsing synthetic soap products who use each brand.* 1948	1947	1946
Vel	45.6%	43.9%	45.8%
Dreft	38.4	54.5	55.8
*Breeze	10.0	—	—
*Tide	7.2	—	—
Swerl	4.3	3.4	4.5
†Miscellaneous	5.7	9.2	1.1

x Used by less than 1% in previous years and therefore included under "Miscellaneous" in those years.
† Including all brands used by less than 1% of the total users of quick sudsing synthetic soap products.
Total brands in use (1948), 36 (1947) and 6, (1946).

The author's interpretation of this data plus other reports is that a relatively few nationally advertised brands control 90% or more of the sales.

THE following information from the same two markets is tabulated below as answering the questions—What package soap product, bar soap, or other cleaning preparation do you use for (1) Fine fabrics (2) Dishes. In all cases the users were 99% or over of the total familics taken in the survey.

The Columbus Dispatch Market Report—Soap for Fine Fabrics

Brand	*Percent of all Families Buying Soaps for Fine Fabrics Who Use Each Brand* 1948	1947
Lux Flakes	33.8%	33.1%
Ivory Flakes	28.6	30.4
Ivory Snow	9.7	9.8
Dreft	7.6	11.7
Ivory Bar	5.5	5.6
Tide	2.9	—
*Chiffon	2.4	—
Vel	2.3	1.4
Duz	2.1	2.7

Rinso	1.5	1.2
†Miscellaneous	3.6	3.0

* Used by less than 1% last year and therefore included under miscellaneous last year.
† Including all brands used by less than 1% of the total consumers of Soap for Fine Fabrics.

The Columbus Dispatch Market Report—Soap for Dishes

Brand	*Percent of all Families Buying Soap for Dishes Who Use Each Brand*	
	1948	1947
Ivory Bar	17.7%	18.0%
Tide	11.4	
Ivory Flakes	10.6	11.8
Rinso	10.0	9.3
Duz	8.8	13.5
Dreft	6.7	11.1
Oxydol	6.3	7.2
Vel	5.3	4.4
Ivory Snow	3.4	3.7
Lux Flakes	3.0	3.1
*Chiffon	2.7	
Super Suds	2.6	3.2
Swan Bar	2.5	3.3
Swerl	1.9	3.4
*Tag Bar	1.8	
Fels Naptha Bar	1.7	1.9
†Miscellaneous	3.6	4.0
Lux Flakes	8.1 36.6	31.1 32.1

* Used by less than 1% last year and therefore included under miscellaneous last year.
† Including all brands used by less than 1% of the total consumers of Soap for Dishes.

FROM the above tables, the synopsis (Table I) has been prepared by the author which groups soap and synthetic detergents into two classes. Miscellaneous is classed here as "soap" although this may not be accurate. In each case the synthetic detergents were from the group "Dreft," "Vel," "Tide," "Breeze" and "Swerl." An examination of the miscellaneous and inclusion of other reports would extend the list no doubt. ("Surf" and "Fab" are 1948 products).

The rapid increase in synthetic detergent usage on the basis of these replies is remarkable and accounts in the writer's opinion for part of the large increase in production over the past few years. Similar 1948 figures for a number of such reports are shown in Table II.

It is estimated that total retail sales of powdered detergents in 1948 probably ran between 350 and 400 million lbs. on a 35% active basis. Since overall production in 1948 was probably 800 million lbs., retail sales would approach 50% of this, leaving approx. 400 million total synthetics for industrial use.

Expansion of usage no doubt accounts for a substantial industrial increase. However, it is felt that 100

(*Turn to Page* 153)

The Milwaukee Journal Market Report
Soap for Fine Fabrics

Brand	*Percent of all families buying soap products for fine fabrics who use each brand.*			
	1948	1947	1946	1945
Lux Flakes	38.1%	36.0%	41.6%	43.6%
Ivory Flakes	18.3	21.4	21.5	22.8
Dreft	10.4	12.6	9.3	2.0
Vel	9.3	6.9	4.9	2.3
Chiffon Flakes	6.8	7.9	8.8	2.9
Ivory Snow	6.3	6.3	8.2	10.2
Ivory Bar	2.5	5.2	4.9	9.0
*Breeze	2.0	—	—	—
Duz	1.1	1.5	1.6	3.2
Lux Bar	1.0	1.2	—	1.1
†Miscellaneous	6.4	6.3	7.2	9.1

* New Product
† Including all brands used by less than 1% of the total users of soap products for fine fabrics.

The Milwaukee Journal Market Report
Soap for Dishes

Brand	*Per cent of all families using soap product for dishes who use each brand.*			
	1948	1947	1946	1945
Vel	16.1%	10.1%	4.6%	2.4%
Dreft	12.1	12.4	5.5	—
Ivory Flakes	8.6	11.6	13.2	12.3
Ivory Bar	7.9	12.7	16.7	19.1
Duz	7.9	10.1	11.2	13.5
Rinso	5.8	7.2	7.7	8.2
Chiffon Flakes	5.4	7.0	7.7	2.6
Super Suds	4.8	3.5	3.5	3.0
*Breeze	4.5	—	—	—
Lux Flakes	4.2	4.0	5.3	5.0
Oxydol	3.8	7.3	6.3	8.9
Ivory Snow	3.4	3.0	4.1	4.6
Perk	2.4	1.8	1.7	—
*Tide	2.2	—	—	—
*Swerl	1.8	—	—	—
Hanser's	1.5	2.9	3.6	4.6
Swan	1.4	2.5	4.9	6.3
*Bright Sail	1.2	—	—	—
†Miscellaneous	8.1	8.6	9.6	14.6

* Used by less than 1% in previous years and therefore included under "Miscellaneous" in those years.
† Including all brands used by less than 1% of the total users of soap products for dishes.

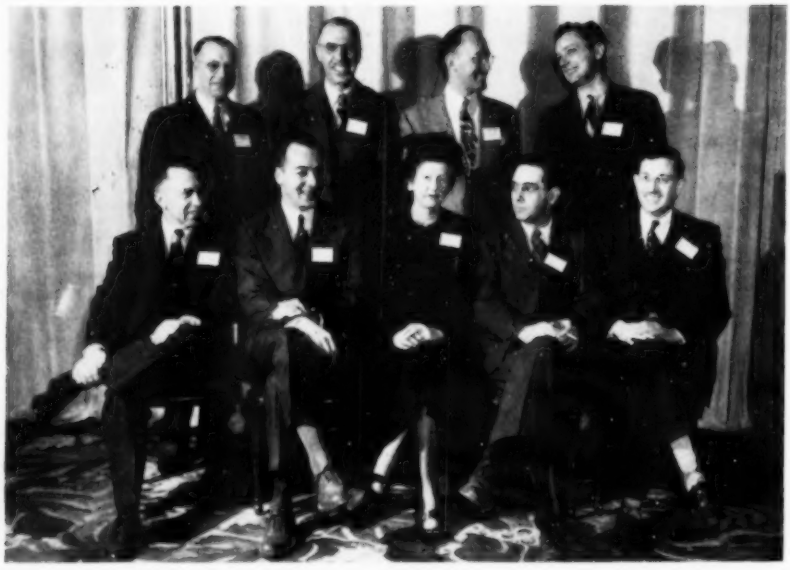
TABLE I

	Columbus Market		*Milwaukee Market*			
Soap for Dishes	1948	1947	1948	1947	1946	1945
Soaps	74.7	81.1	63.3	77.5	89.9	97.6
Synthetics	25.3	18.9	36.7	22.5	10.1	2.4
Total	100.0	100.0	100.0	100.0	100.0	100.0
Soap for fine Fabrics						
Soaps	87.2	86.9	78.3	80.5	85.8	85.7
Synthetics	12.8	13.1	21.7	19.5	14.2	4.3
Total	100.0	100.0	100.0	100.0	100.0	100.0

TABLE II

% Synthetic Detergents calculated as above (1948) Miscellaneous classified as "soap" in each case.

Families Reporting (Round figures)	City	For Dishes	For Fine Fabrics
237,000	Milwaukee	36.7	21.7
105,000	Columbus	25.3	12.8
105,000	St. Paul	32.9	26.9
83,000	Omaha	71.3	46.5
67,000	Sacramento	20.8	18.3
36,000	Fresno	47.6	27.0
12,000	Modesto	97.4	29.1
	Approx. weighted average	40%	23%



Attendance

THE semi-annual fall meeting of the American Oil Chemists Society held at the Hotel Pennsylvania, New York, November 15 and 16, attracted an attendance of over 625 members and guests, making it the best attended fall meeting in the society's history. Simultaneous sessions were scheduled at this year's meeting, thus making it possible to concentrate papers on soaps and detergents into an individual section. Foster D. Snell of Foster D. Snell, Inc., New York, was general chairman for the meeting, with H. W. Vahlteich of Best Foods, Inc., as chairman of the program committee. W. A. Peterson of Colgate-Palmolive-Peet Co., and L. B. Parsons of Lever Bros. Co., were in charge of the two special sessions of the soap and detergent section.

Featured in the soap section papers was a report by Leo D. Jones and L. Sender of Sharples Corp., Philadelphia, on the first commercial

Top Photo—New York Committee members included (seated) E. A. Sigworth, Industrial Chemical Sales, West Virginia Pulp and Paper Co.; T. M. Rinehart, Darco Corp.; (Standing(W. M. Sperry, New York State Psychiatric Institute; R. H. Rogers, Jr., Swift and Co.; M. H. Gwynn; A. L. Sawyer, Lever Bros.; and A. A. Kramer, L. A, Salomon & Bro.

Center—A group of Chicagoans: A. A. Kiess, and A. D. Van de Erve, Armour and Co.; Mrs. Lucy R. Hawkins, A.O.C.S., R. Bates, Armour and Co.; S. B. Radlove. (Standing) H C. Dormitzer. Wilson and Co.; M. J. Sheely, Armour and Co.; R. B. Muller, Durkee Famous Foods; and H. T. Iveson, Glidden Co.

Bottom—Members of the Governing Board: (seated) John R. Mays, Jr., Barrow-Agee Labs., director; V. C. Mehlenbacher, Swift & Co, A.O.C.S. vice-president; C. P. Long, Procter & Gamble, president of the society; L. B. Parsons, Lever Bros., director; (Standing) G. A. Crapple, Wilson & Co., director; and R. T. Milner, Northern Regional Research Lab., S. O. Sorensen, Archer-Daniels-Midland Co., and K. S. Markley, Southern Regional Research Lab., past presidents

Record at Oil Chemists' Fall Meeting

installation in the United States of a soap plant employing the new Sharples continuous soap making process. Theories of detergency and the function of synthetic detergents in textile processing were also discussed by other speakers.

Reports were given by committees on fat and oil analysis, color, uniform methods and glycerine analysis. A motion was passed accepting the glycerine analysis committee's recommendation that the Society accept sample "B," a standard crude glycerine sample, for distribution by the Secretary. The sample is prepared according to an accepted analysis for use by industry and is especially useful for checking purposes. About 250 4-oz bottles of the samples are available, and each includes a certificate of analysis with reference to appropriate A.O.C.S. methods for each analysis.

Revisions in methods were recommended, namely, a revision in the periodic acid method test for glycerol content, section EA 6-46, and in the method for a closed cup flash point determination. The fat analysis committee recommended methods for determinations of specific gravity, viscosity and flash and fire analysis, which were acted upon and adopted at the meeting.

THE Sharples continuous soap making process, which operates on the same chemical principles and uses the same raw materials as the full-boil kettle process, but employs centrifugals for the separation of soap and glycerine in each of the stages, was described in a paper titled "The Sharples Centrifugal Soap Process," by Mr. Leo D. Jones.

The development of the Sharples Process started about ten years ago on a laboratory scale with the design of a continuous mixer to be used in conjunction with the centrifuges, progressing to a small pilot plant, which permitted continuous operation for five or six hours. From this point, work was continued on a larger scale in a pilot plant of commercial size at the Baltimore plant of the Lever Brothers' Co. Results obtained are reported very satisfactory, and ten additional installations of plants employing the Sharples Process are reported being made in various parts of the world.

Of prime importance, in the development procedure were the design of centrifuges and mixers, and the studies of rapid saponification and controls for the process. The new feature of the super-centrifuge, as compared to a conventional centrifuge, is the design of a special bowl, which permits discharging of the lighter phase (neat soap) at the lower collector and, consequently, permits a greater ease in handling this phase in the subsequent operations.

The Sharples process involves a continuous operation of countercurrent flow of water and reagents to fats, oils and soap; it is divided into several stages, each consisting of a feed tank, pump, mixer, super-centrifuge, and flow control device. The system was described and illustrated by Mr. Jones in the course of his presentation.

Having explained the theory of saponification, and the relation of the rate of reaction to the soap phase, Mr. Jones pointed out that, under proper conditions, a high degree of saponification may be effected in a short time. These conditions require that the mixer first be primed with soap and then fat and alkali continuously charged and withdrawn from the mixer. By this method, over 90% of neutral tallow may be saponified in a single mixing with a retention time of about one-hour.

A total hold-up in the system of two hours results in complete saponification, yielding a spent lye with less than .1% Na_2O content. This value is less than 1% of the NaOH charged to the process. The Sharples process can be used with equal facility on mixtures ranging from 100% tallow to 65% tallow plus 35% coconut oil. It has also been used successfully on materials refined to .0%-20% F.F.A.

Due to a more complete separation of the aqueous phase by the Sharples process, the soap phase contains less than .4% glycerine, and the lye, 20% glycerine. To produce a soap of similar glycerine content by the kettle soap process would require more than twice as many soap changes (where changes are comparable to the stages of the Sharples process); furthermore, the corresponding glycerine content of the lye would be about 10%, half that obtained by the centrifugal process, and twice as voluminous.

Since values of the salt, F.F.A. and alkali content of the neat soap depend on the phase relation in the fitting operation, and since the feed of salt and alkali to these stages can be adjusted to meet requirements of the operator, the quality of the neap soap can be controlled with no sacrifice; the neat soap is exactly comparable to that obtained by the process. By adjusting the feed of water or reagents to the last stage, the Na_2O and Cl content of the neat soap can be varied between .05% to .5% and .40 to 1.00%, for the Na_2O and Cl, respectively.

In the continuous process, all of the nigre is completely recycled.

Even with this complete reuse of the nigre, a better color condition of the finished soap is obtained, as compared to the kettle process, which discards a part of the nigre in the fitting stage and bleaches the soap. This improvement in color is due to the prevailing conditions of the continuous process, as the rapid saponification, short time of soap and fat at high temperatures, and time in contact with air. Data tabulating a comparison of color on stocks and fatty acids, as obtained in the pilot plant operation, were also given by Mr. Jones.

IN his paper "Soap Versus Synthetic Detergents," Foster D. Snell pointed out the increasing trend to use of synthetic detergents in direct substitution for soap. This tendency has increased steadily within the past five years, until today one pound of synthetic detergents is bought for every five pounds of soap. This is a strong indication of the upward trend in the adoption of these products, when we consider the fact that the public had not even heard of synthetic detergents a few years ago.

One of the advantages in the use of synthetic detergents is their effectiveness in hard water and in water with a low pH value; in these cases, soap has definite limitations. The use of detergents for general cleaning in direct replacement of soap became quite popular during the wartime fat shortage.

The largest manufactured group of synthetics are the alkyl-aryl sulfonates, which are produced from petroleum; of fat and oil origin are the alkyl sulfates and sulfated monoglycerides; and still a third group of detergents are those in the non-ionic classification, which are produced by the addition of ethylene oxide to long-chain alcohols, mercaptans, phenols and acids.

The manufacturing cost of synthetic detergents is considerably higher than that for soap; however, with the exception of the non-ionics, they can be "built" to a greater extent than soap. Materials like sodium sulfates, which cost considerably less per pound, are usually used as builders and bring the value per pound into the same range as soap. The addition of builders increases the effectiveness of cleaning agents, and since the synthetics use a higher percentage than soap, their cleaning ability is further enhanced.

The non-ionic type detergents cannot be built; and since at least half the finished weight is due to ethylene oxide, currently valued at 15 to 16¢ per pound, they are quite expensive to produce. The increased efficiency of the products, however, has developed household sales to some extent.

With increased research in the field of synthetic detergents, it is expected that in the future most synthetics will draw on petroleum fractions and condensed gaseous olefins for the hydrocarbon radicals.

THE principles of detergency as applied in the textile industry were covered by A. M. Schwartz, Harris Research Laboratories, Washington, D. C., in his paper "Principles of Detergency and Their Application in Textile Processing."

Detergency may be thought of as being composed of: (1) the solid object or substrate, (2) soil or dirt, and (3) the liquid bath separating items one and two. These may be used to state the detersive process in the form of a reversible equation:

$$(\text{Soil—Substrate}) + \text{Bath} = \text{Soil} + \text{Substrate} + \text{Bath}$$

The aqueous solution or bath may contain builders, colloidal additives, and hardness, and may affect the rate of the reaction should any of its constituents react with the substrate.

The reaction is primarily influenced by five observable factors: 1. the nature of the substrate, 2. the nature of the soil, 3. composition of the bath, 4. physical condition of washing, and 5. relative quantities of soil, substrate and bath. The first item is usually fixed, the nature of the soil involved is usually known quite accurately, and the last three factors are subject to control. In considering item 5, it should be realized that the effectiveness of the bath will be influenced by the amount of soil in suspension. The adjustment of any of these variables will alter the efficiency of the scouring operation. The % soil removal was determined on several fabrics using both alkyl aryl sulfonates and soap as the detersive agents. From the data, which was presented in tabular form, it was evident that both AAS and soap have their definite place in textile processing, since each has its advantages when used with a particular fabric. The following is a partial list of the data as presented:

Fabric	% Soil Removal	
	Alkyl Aryl Sulfate	Soap
Cotton	18.0	20.09
Viscose	14.5	19.7
Acetate	42.0	31.0
Nylon	41.0	45.0

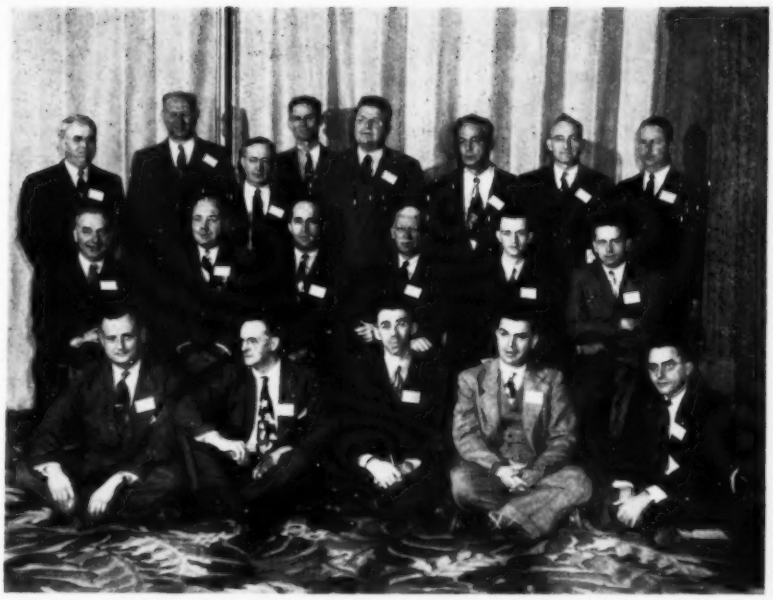
In considering the stability of the soil, several factors to be taken into consideration are: the interfacial adhesional forces (Van Der Waals); coulombic or electrostatic forces; and the mechanical forces. Involved in the overall reaction are the mechanics of interest to the physical chemist, and include: 1. wetting (adsorption of surface active ions or molecules), 2. adsorption of ions of high specific charge (mostly inorganic, especially builders), 3. adsorption of colloidal particles or micelles and 4. solubilization of soil in the bath.

An understanding of the several mechanics involved and their effect on the scouring operation permits greater control of the efficiency of the process.

THE removal of dirt can not be effected by soaking alone; mechanical action is necessary. An attempt is made to isolate the chemical part of the process in the paper "The Chemistry of Detergency," by I. J. Gruntfest and E. M. Young, Jr., Rohm and Haas Company, Philadelphia.

Samples were prepared by shaking cotton fabric in the presence of carbon particles and measuring the amount of dirt retained by the whiteness retention test.

From the experiments, it was found that a critical concentration of soap existed above which value the soiled fabric was cleaned, and below which it was dirtied. Following this definition of the critical soap content, a series of tests was made on increasingly dirty fabrics, and the soap concentration adjusted to the critical soap content for each fabric. The "dirti-



Group of soap chemists at A.O.C.S. meeting: (floor) E. L. Boley, Armour & Co., Chicago; and J. T. R. Andrews, R. J. Grabenstetter, F. L. Diehl and R. C. Stillman, all with Procter and Gamble Co., Cincinnati.

(center) L. K. Whyte, Colgate-Palmolive-Peet Co., Kansas City; W. A. Peterson, C-P-P, Jersey City; E. Handschumaker and E. M. James, Lever Bros., Cambridge; N. D. Fulton, Jr. and H. K. Hawley, P & G, Cincinnati.

(standing) H. C. Bennett, Los Angeles Soap Co.; W. C. Wood, Par Soap Co.; C. P. Long, P & G; C. J. Lohman, Andrew Jergens Co., Cincinnati; L. B. Parsons, Lever Bros., Cambridge; Procter Thomson, P & G. Cincinnati; C. P. Morrison, P & G, Staten Island; and L. B. Smith, Lever Bros., Cambridge.

ness" of the fabric was measured by the standard reflection method, and data plotted. A linear relation resulted with zero intercept. Co-ordinates of the system were: critical soap content as the abscissa, and the reflection as the ordinate. The zero intercept may be interpreted to indicate that the cloth involved does not enter into the reaction.

SURFACE active agents and soap are both used in the textile mills. The synthetic detergents, being stable to acid water and metallic salts, are especially useful in operations involving a transfer to several acid solutions. A soap could not be used in such an operation, as explained by H. C. Borghetty, General Dyestuff Corporation, New York, in his paper "Detergents in the Textile Industry."

Soap has a long hydrocarbon chain with a carboxyl group attached to it. As the length of the chain increases, the degree of saturation increases, and the solubility decreases, which properties are sometimes desirable depending on the application.

All types of detergents are in use in the textile industry. The detersive agent is selected by its applicability to the particular operation. Non-ionic detergents, having a low affinity for fibres, possess good rinsing properties. In the bleaching operation, detergents serve the dual role of first acting as wetting agents and then detergents.

THE deficiencies of soaps as detergents in hard water, and the limitations of an alkyl aryl sulfonate in cleansing cotton, are well recognized in the field of detergency. The results of an attempt to improve these deficiencies by adding a non-ionic agent were reported by George E. Barker, Atlas Powder Co., Delaware, in his paper "The Effect of a Non-Ionic Detergent on the Detergency of Alkylaryl Sulfonates and Soap in Hard Water."

In an alkyl aryl sulfonate, where the AAS content has been reduced by one-half and replaced with a non-ionic detergent, "Renex," the relative detergency efficiency improved by about 45 per cent. A relative detergency value of 117 for the all AAS sample increased to 168 for the 50-50 mixture of Renex + alkyl aryl sulfonate. The builder quantities remained unchanged in the course of these tests. A similar improvement was observed when CMC, salts and alkalis were the builders.

Repeating the process with a tallow soap, an improvement of 19 per cent was observed in the relative detergency efficiency, when one-half the tallow content was replaced with Renex. Detergency value rose from 100 for an unadulterated sample to 119 for the tallow and Renex sample. A blank run with the samples in this experiment yielded 40% soil removal.

THE photometric and colorimetric methods for the determination of potassium are not entirely satisfactory due to interference of elements present and unreliability of the results. A modified version of a method suggested by Willard & Boyle in 1941 was described in the paper "The Determination of Potassium in Soap and Mixed Caustic Lye" by W. J. Miller and J. T. R. Andrews, Procter and Gamble Co.

The potassium is determined as KIO_4, which compound is insoluble in water, but not to the extent that it could be extracted quantitatively. According to the method suggested by Willard, KIO_4 is found to be quantitatively insoluble in a 50-50 mixture of ethyl alcohol and ethyl acetate, and, therefore, may be practically determined. One-tenth normal thiosulfate is used for the titration.

Dr. Andrews went into great detail describing the entire method of analysis, and emphasized the excellent reproducibility of this method. Five laboratories made quantitative KIO_4 determinations on three different

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Antiseptic SOAPS

By M. Martin Maglio
Vestal Laboratories, Inc.

ANTISEPTIC soaps have been the subject of research investigations for many years, their history dating back to about 1880 when the renowned German bacteriologist, Robert Koch, first studied the bactericidal properties of soap. In the 70 years that have passed since Koch's original investigation, a great deal of work has been accomplished, and much of it has been recorded in the technical literature.

Limitations of Ordinary Soap

DIASIO (1) and Klarmann (2) have published extensive reviews of the subject and the interested reader is referred to their excellent papers for complete details. It will suffice for us to summarize briefly the findings to date. The one fact that stands out experimentally is that certain micro-organisms are definitely susceptible to the action of ordinary liquid and bar soap, whereas others remain notably unaffected. Included in the latter class are *staphylococci*, which constitute the greater part of the resident flora of human skin. Experimenters in general have agreed that soaps, regardless of the vegetable fats and oils employed in their preparation, are not germicidal nor antiseptic against *staphylococci*, but it is noteworthy that rosin soaps, however, display definite activity in this direction, as shown in the work of Cade and Halvorson,(3) Klarmann and Shternov, (4) and Pohle and Stuart. (5,6)

In vitro experiments by Neufeld, Schiemann and Schultz (7) showed that vegetable oil soaps are germicidal against *Pneumococci*, but these investigators did not substantiate these same results on washing skin areas artifically infected with these bacteria. Other investigators have found that *Escherichia coli* and *Salmonella typhosa* may be killed *in vitro* by soaps containing a high percentage of coconut oil or fatty acids, but again, washing tests failed to yield duplicate results, further corroborating previous evidence that ordinary liquid and bar soaps are not sufficiently germicidal nor antiseptic. In line with this, Norton (8) was of the opinion that micro-organisms could be removed from the hands just as satisfactorily by ordinary soap as by the "germicidal" soaps developed up to that time. He stressed, however, the advisability of eliminating bacteria from the surface of the body, particularly the hands which play an all-too-important role in the transmission of communicable diseases.

Washing with ordinary soap, it is generally agreed, physically eliminates dirt, grease, oil and other foreign matter and with them many, although not all, of the germs present on the skin surface.

Soap, as a detergent, serves two main purposes: emulsifying water-insoluble liquids and suspending solid particles of foreign matter including bacteria. Naturally, the mechanical action of rubbing and scrubbing also

aids in dirt removal, but the inactivation or killing of bacteria still poses a problem.

Bacterial Aspects

AS is well known, the skin is of a complex nature and presents a barrier against the possible encroachment of bacteria. In some unknown manner, furthermore, it often nullifies the effect of micro-organisms in contact with it, as brought out in the investigations of Arnold et al. ,(9,10) Burtenshaw (11,12) and Schiemann. (13)

Price (14) has divided bacteria into two general classes, the "transients" and the "residents." The former represent the bacteria and fungi of all kinds which come to rest on the skin, but are incapable of remaining there permanently. The "residents," on the other hand, are the normal flora of deeper layers of skin. These are mainly *staphylococci* and, since they are resistant to germicides and furthermore are not easily contacted, they are killed only with difficulty.

Staphylococci, both harmful and harmless, represent the major portion of the resident flora of the skin, and it must be remembered that ordinary soap has no antiseptic value against these micro-organisms. As explained previously, much effort has accordingly been directed toward the incorporation of suitable germicides or disinfectants into soap so as to abet the antiseptic qualities of the latter and, as a result, a number of germicidal and antiseptic soaps has appeared commercially from time to time. Oddly enough, the claims made for these soaps have lacked verification by *in vitro* or *in vivo* tests, employing S. *aureus* as the test organism.

Obviously, complete elimination of the transient and resident flora is virtually impossible under actual and practical conditions of test for, if a germicide were potent enough to accomplish this in a reasonably short time, it would probably be a primary irritant and, as such, undesirable. It is important, however, that pathogenic contaminations should be eliminated from the skin as thoroughly as possible to ensure antiseptic, if not germicidal, environment. This is particularly true of anaesthetists, hospital personnel, nurses, obstetricians, physicians and surgeons, patients afflicted with open wounds and abscesses, mechanics, factory employees, laborers, and even the public at large, especially that portion living in crowded cities.

Germicide Requirements

APPARENTLY, an obvious need for an antiseptic soap exists, but the difficulties entailed in the preparation of such a soap, until very recently, had not been obviated. To be useful for the manufacture of antiseptic soaps, a germicide must meet very rigid and restricting requirements, some of which are:

(a) It should retain its bactericidal properties in soap and in alkaline media;
(b) It should not be toxic to humans nor irritating to the skin nor can it be a sensitizer;
(c) It should be non-volatile, so as to remain permanently in the soap;
(d) It should preferably be odorless or possess a pleasant odor;
(e) It should be colorless or nearly so, so as to avoid imparting color to the finished product;
(f) It should not react with the soap nor the water present;
(g) It should be resistant to free alkali, if present in the soap, and to any alkalinity resulting from hydrolysis;
(h) It should be reasonably priced, so that its introduction into soap formulae remains on an economically sound basis.

Past Developments

THE past failure to develop a satisfactory antiseptic soap was not due to any scarcity of sufficiently potent germicidal agents, but rather that most of these compounds lost their potency in alkaline media or in soap.

Around the turn of the century, McClintock (15) suggested the use of mercuric iodide in the form of its water-soluble complex salt with potassium iodide, and it has served a limited role in hygienics since. Any number of other mercury compounds, mainly organic mercurials, has also been suggested (16) for use in soap, but these have met with disfavor due to their toxic and inherently irritating properties. Furthermore, many mercury compounds are bacteriostatic in their action rather than bactericidal. Morton (17) stressed this as recently as four years ago when he showed that soaps containing mercurials are able to inhibit growth of *staphylococci* but do not destroy the latter easily.

The phenols have also been suggested as germicides for soaps, but such compounded soaps are far from satisfactory in actual use. Generally the phenol is present in such large concentration, upward of 20 percent, for example, that the soap is extremely irritating to the user.

When the concentration of phenols is reduced to considerably lower percentages, their bactericidal strengths decrease to a point where they are relatively ineffectual. Hampil (18) confirmed this specifically with alkylphenols and alkylresorcinols and generally with phenols, concluding that the results were due to the inhibition of the alkali soaps. A more probable explanation is that the phenol derivatives react with the soap, forming metallic phenolates which are poor bactericides.

Latest Developments

THE extensive search for germicidal agents that would retain most, if not all, of their bactericidal properties when incorporated into soaps and thereby become useful for the production of antiseptic soaps, has uncovered a number of diphenols which meet these requirements. These diphenols are basically derivatives of diphenyl, diphenylmethane and diphenylsulfide. Typical examples are 2,2'-dihydroxy-3,5-3', 5'-tetrahloro-diphenyl,(19) 2,2'-dihydroxy-3, 5, 6-3', 5', 6'-hexachloro diphenylmethane (20,21) and 2,2'-dihydroxy-3,5,6-3', 5', 6'-hexachloro diphenylsulfide.(22) These substances are so weakly acidic that, when they are added to excess alkali, only one of the two phenolic groups is neutralized,

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SODIUM SILICATE

By John R. Skeen
Market Research Department
Foster D. Snell, Inc.

THE soluble sodium silicates were among the first industrial chemicals to achieve importance domestically. Made since 1861, they were at first used almost exclusively as soap additives. To-day, there are a hundred diverse outlets so that of the amount produced less than a fifth is required by the soap trade. Throughout the long history, there have been few occasions when the supply of silicates was not equal to all demands.

When the war began, the most important use of the silicates was as adhesives in container and insulating board manufacture, as additives in bleaching operations in the textile and paper pulp industries, for hardening concrete and acidproofing cements, clarifying water, and as a detergent both in laundering and soap production. These industries expanded and the demand for the silicates increased. However, in 1942, the consumption of the lauric acid oils was reduced to a third of the year before and the need for the silicates in soap abated sharply. Capacity was taxed almost immediately when the production of high octane gasoline became significant early in 1943. A large tonnage of catalysts was required and the silicates became of major importance. In order to meet these war-induced needs, new plants were built by Diamond Alkali Co. and the Pittsburgh Plate Glass Co.

Early in 1946, the supply of silicates was inadequate. There were two contributing reasons. Equipment, improperly maintained because of the urgent needs of the previous years, broke down and required a general overhauling. This was coincident with the deficit in the soda ash supply. Both situations have been corrected. While it is understood that there is presently sufficient capacity for all demands, it is believed that this situation will not long obtain. However, the industry is prepared to expand its facilities to the extent justified by the market.

Sodium silicates are made by fusing sand and soda ash in large open hearth furnaces at temperatures of about 1300°C. The product is a clear, transparent green, resembling glass. Depending upon the composition, it is dissolved in water or steam under pressure and the concentration is made the maximum possible for convenience. By varying the ratio of alkali to silica, as well as the concentration of the resulting solutions, more than 50 commercial products are obtained. These have specific attributes and uses, and at least 13 are of value in soap making.

While the discovery of glass is often attributed to the early Phoenicians, it appears that it wasn't until the Eighteenth Century that the soluble form was recognized by J. R. Glauber. He called it 'liquid silicum.' In 1823, J. N. Von Fuchs devised a method for making 'Wasserglass' and found the first use for it in fixing fresco colors. Shortly after, water glass was used as an additive in soap.

It is probable that Thomas Elkinton, a Quaker of Philadelphia, was the first American to investigate the value of sodium silicate in combination with soap. Experiments be-

SODIUM SILICATE[1]

unit: short tons

	Net Domestic Supply (anhydrous)[2]	Production: Liquid & Solid (anhydrous)[3]	Production: Liquid (40° Be)[4]	Production: Solid (all forms)[3]	Foreign Trade: Exports[6]	Foreign Trade: Imports[6]	Plants number	Price Cent/#,40°[7]	Consumption in Soap: in silicates[8]	Consumption in Soap: per cent of soap fats[9]
1933	232,200	240,500	n.a.	n.a.	21,947	46	28	0.756		
1935	228,000	231,000	577,587	30,536	7,879	109	24	0.800		
1937	240,600	243,500	600,979	40,473	7,797	69	25	0.800	25.0	7.1
1939	297,000	300,000	747,845	72,174	8,019	51	27	0.800		
1941	375,300	386,189	932,551	90,858	11,023	101		0.800		
1942	319,300	322,506	767,977	76,303	8,489	98		0.800		
1943	358,900	361,863	919,745	103,397	7,813	34	31	0.800		
1944	425,300	428,353	1,265,000	80,000	8,218	51	29	0.800	(ca) 15[11]	(ca) 5.5[12]
1945	406,700	410,686			10,484	n.a.	29	0.800		
1946	402,800	412,357			25,049	n.a.	29	0.812		
1947	466,600	478,747			31,862	n.a.	29	0.950	16	6.7
1948 1Q	133,900	136,321			6,260	n.a.		1.000		
2Q	109,400	111,454			5,350	n.a.		1.000		
3Q	109,800	111,474[10]			4,383[10]	n.a.		1.000[10]		

[1] All types and grades.
[2] An approximation only; total anhydrous production plus imports (anhydrous equivalent assuming 40° Be), less exports (anhydrous equivalent assuming 40° Be).
[3] Total soluble silicate glass both liquid and solid, including that processed into ortho, meta, and sesqui silicates, expressed as anhydrous equivalent; exclusive of two plants producing metasilicate directly; all values from Bureau of the Census; 1933-37: *Census of Manufacturers*, 40° Be equivalents are: 1933—630M tons, 1935—608M tons, 1937—641M tons; 1939, approximate only; 1941—45 as reported, *Facts for Industry*, series M19A—supplements; 1946, ibid, monthly reports.
[4] As reported; *Census of Manufactures*, 1933-39; *Facts for Industry*, series 6-1-1, 1941-43; ibid, series 6-1-, Jan.—Apr. 1944; 1944 is estimate based upon Jan.—April rate.
[5] As reported; includes solid meta, ortho and sesqui sodium silicate; for sources, see (4).
[6] *Foreign Commerce and Navigation*, 1933-44; 1945-, Reports *FT-410* and FT-110; reported in pounds, converted to short tons; all types, unspecified.
[7] Bureau of Labor Statistics; 1933-39: works; 1940-: turbid, drums, c.l., f.o.b. works.
[8] Silicates consumed in soap as per cent of total silicate production; the only "official" figure is that of 1937, Bureau of the Census: 160M tons of 40° Be; R. C. Merrill estimated "over 200,000 tons of 40° Be" for 1947, thus the 16% is only approximate.
[9] Silicates consumed in soap as per cent of fats, oils, rosin and tall oil consumed in soap; for latter values see *The Fats and Oils Situation*, August 1948, p. 4; 1937, a close value; 1947 estimate depends upon accuracy of silicate approximation of R. C. Merrill.
[10] July—August rate.
[11] Roughly approximate only; may be as low as 13%.
[12] Roughly approximate only; may be as low as 5%, or 70% of "normal" usage.

gan in 1857 and sales appear to have been made four years later. The Civil War gave great impetus to this venture. Supplies of rosin from the South were cut off, fats were scarce and prices high. The silicates were newly available at a relatively low price and they were used primarily as substitutes for rosin and as extenders for soap. In 1864, the pioneer enterprise of the Elkintons became known as the Philadelphia Quartz Co.

In these early years, about 16 grades of silicates were available to soap makers. Small outlets were obtained in the manufacture of artificial stone and mucilage. Until 1890, the dominant market was for incorporation in laundry soap. Then when the corrugated shipping boxes, laminated fiber sheets, and wall board were introduced before the turn of the Century, the sodium silicates found vigorous new markets. Although minor, consumption also grew for protecting stone, cement making and in dyeing.

By 1914, consumption was about equal in the soap and corrugated box industries and accounted for 80 percent of the silicates produced. Since then, much of the increased demand is attributed to the remarkable growth of fiber board. There was then the rise of rayon which, by 1927, consumed over 16 million pounds of sodium silicate (40° Be).

While the Philadelphia Quartz Co. was the first producer, others entered the field. Early in the Century, General Chemical Co., Grasselli Chemical Co. and Mechling Brothers Manufacturing Co. were major factors. Procter and Gamble Co. began about 1915 in Kansas City and the Philadelphia Quartz Co. erected a plant at Berkeley, Calif. two years later.

Shortly after, the Standard Silicate Co. (subsidiary of Diamond Alkali Co.) began at Painesville, Ohio. By 1920, there were at least 11 manufacturers operating plants all over the country. Presently, the major producers of silicates are Philadelphia Quartz, E. I. du Pont de Nemours and Co., Inc. (Grasselli), General (including Mechling) and Diamond.

New Soap Materials at Chemical Exposition

By H. H. Slawson

OVER 200 exhibitors participated in the fifth National Chemical Exposition held at the Coliseum in Chicago, Oct. 12 to 16. Some 40,000 persons visited the exhibit at which new chemicals, processing, servicing and packaging equipment were on display.

In six sessions of an industrial chemical conference held during the week, pertinent problems of chemical production and promotion and chemical plant management were discussed by scientists and industrialists. "Chemical Trail Blazers," an educational feature, showing the latest significant developments in chemical science, was the center of attraction, as were the booth of the Special Libraries Association, and the displays of the four regional laboratories of the U. S. Dept. of Agriculture.

A luncheon meeting brought together representatives of the Chicago Association of Commerce and Industry, the Illinois Manufacturers Association and the Chicago section of the American Chemical Society to mark the opening of the show. Charles A. Thomas, of Monsanto Chemical Co., president of the American Chemical Society, was guest speaker at a dinner tendered in his honor by the Society's Chicago section, which sponsored the entire week's varied events.

"Young ideas with a future," a slogan displayed by American Cyanamid Co. in its booth, might have been the theme of all the trade displays. For the maker of soap and sanitation products there was a variety of new chemicals of importance to their businesses. Many of the products were presented here for the first time. American Cyanamid Co., New York, introduced a new anti-oxidant for soap.

New wetting agents were prominent in many company exhibits, among them the chemical division of Armour & Co., Chicago; Carbide & Carbon Chemicals Corp., New York; Hercules Powder Co., Wilmington; Oronite Chemical Co., San Francisco; Socony-Vacuum Oil Co., New York; and Victor Chemical Works, Chicago.

Carbide & Carbon's demonstrations of its "wetter water" was a feature of the Chemical Trail Blazers display. Socony-Vacuum's new wetting agent was of interest because of its use with DDT for helicopter spraying.

Armour's chemical division presented three groups of new surface active agents, "Ethomeens," "Ethomids" and "Ethofats," whose functions are closely related. Other new Armour products shown included "Arquads" or alkyl quaternary ammonium salts, some of which were used to spray a suburban Chicago garbage dump to eliminate offensive odors. Other sanitization uses for the "Arquads" were demonstrated and it was announced that still further uses are being sought, including possible utilization in a dandruff-removing shampoo and an antiseptic soap-like material. Dale Stingley and E. W. Segebrecht were in charge for the company.

Victor Chemical Works, Chicago, had the largest individual booth in the show to display its products and tell its story of research and production. Huge photo-murals illustrated the uses of Victor chemicals in familiar everyday environments. At either end of the main aisle were three revolving drums, bearing the complete catalog of Victor products, and lining the aisle were illuminated shelves holding samples of Victor products. Among the staff on duty were J. M. Gillett, director of industrial research, Dr. H. Adler, chief chemist, O. H. Raschke, director of sales, and E. M. Myers, advertising manager.

Dow Chemical Co., Midland, Mich., showed almost 400 chemicals covering its full line of agricultural and industrial compounds, aromatics, solvents and other products. Among end products shown was "Saran." Four miniature dioramas recalled four famous "firsts" in the company's

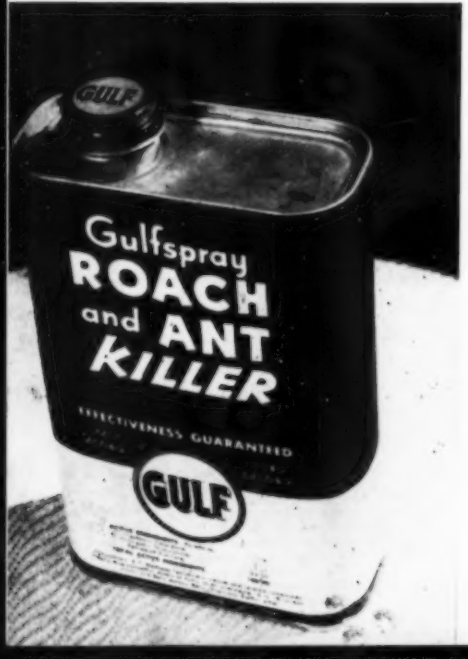
(*Turn to Page 65*)

New Products

Above: Part of the completely redesigned line of packages for household cleaners and polishes made by O-Cedar Corp., Chicago. New labels and a new trademark designed to tie the line together were adopted. Bottles are by Owens-Illinois Glass Co.

Above: New type household deodorant, based on aerosol spray principle, announced recently by Bridgeport Brass Company's Aer*a*sol division. Product's name is "Good-aire."

Below: New "Gulfspray" insecticide, recently announced by Gulf Oil Corp., Pittsburgh, is the product of two and one-half years' research. Product now contains chlordane.



Right: New line of hard-milled "Perfume Soap," announced recently by Ann Haviland, New York. Soap is designed to match fragrance of firm's perfumes. It is made in five colors.

Above: Latest addition to the Bon Ami Co., New York, family of cleaning products is "Glass Gloss," wax-like cleaner for glass and silver. It is being introduced on the Pacific Coast and in Texas initially.

Right: New "Korvo" hair and scalp treatment product introduced recently by Phil Kalech, Inc., Chicago. Mr. Kalech was a Toni, Inc., vice-president. Bottle by Owens-Illinois Glass Co.

Above: Soap, cologne and dusting powder are combined in this new gift package of Richard Hudnut, New York. Package retails for $3.00.

Below: "Formula 40," a new, "no-rub" type metal cleaner, introduced recently by John C. Charles Co., Los Angeles. Comes in six, 12 and 21 ounce sizes retailing at 69 cents; $1.50, and 2.00, respectively. Fair traded.

Right: New counter display for "Shasta," new cream shampoo made by Procter & Gamble Co., Cincinnati. Display is formed from original shipping carton.

Chemicals

FOR THE PROCESS INDUSTRIES

REMEMBER — when Joseph Turner and Company could furnish *all* the Industrial Chemicals you wanted?

We don't know when those days will return, but we hope it will be soon.

We are proud to have been able to keep our regular accounts operating — dispite short supplies — and pledge our continued efforts.

There's still no substitute for the word experience.*

* Serving Industry Since 1861.

JOSEPH TURNER & CO

83 Exchange Place, Providence, R. I. RIDGEFIELD, NEW JERSEY 435 N. Michigan Ave., Chicago, Ill.

TRADE NEWS

Markets Bar Detergent

Colgate - Palmolive - Peet Co., Jersey City, recently introduced a bar form detergent in several stores in the mid-western area and in a few department stores, including Gimbel Brothers, New York. The detergent known as "Vel Beauty Bar" is a monoglyceride which retails at 25 cents. Test marketing campaigns in Grand Rapids and Lansing, Mich., Racine, Wis., and Duluth, Minn., will soon be extended to other areas, according to the company.

Cos. Chemists Meet Dec. 8

The annual meeting of the Society of Cosmetic Chemists is being held at the Biltmore Hotel, New York, Dec. 8. Main emphasis of the program is on the skin and its reaction to cosmetics.

In addition, following the regular meeting, the Society's first Medal Award is being presented to Dr. Marston T. Bogart, professor emeritus of organic chemistry at Columbia University and author of several hundred papers on perfuming materials.

Detergent Plant Cuts Staff

The Buffalo, N. Y. detergent plant of National Aniline Division, Allied Chemical & Dye Corp., New York, recently laid off several hundred workers in the midst of a large expansion program because of a falling off of business. The plant is said to be going through a period of inventory adjustments caused by reduced activity in the textile industry.

"Dial" Bows in New York

"Dial," a new deodorant soap made by Armour & Co., Chicago, was introduced for the first time in the New York marketing area recently. Full page newspaper advertisements and subway car cards were used to promote "Dial," which was originally introduced in Chicago with full page, perfumed newspaper advertisements. The copy theme that even the best people need a deodorant is also used in the New York advertising.

Above: T. W. Pierce, who last month was named manager of the Atlanta, Ga., branch of Lever Brothers Co., Cambridge, succeeding, Robert O. Smith, who resigned to join the New York advertising agency of Benton and Bowles.

New Detergent Firm

Scott Detergents, Philadelphia, was recently organized by Harry A. Hessler. The firm's headquarters are located at 1737 Micican St., Philadelphia 38.

Pleasants on Management

The benefits of a profitable business operation were enumerated in a recent address by James G. Pleasants, recently appointed vice-president in charge of manufacturing for Procter & Gamble Co., Cincinnati, before the Training Within Industry Foundation, meeting at the Hotel Gibson, Cincinnati, Nov. 4. Executives of many of the United States' leading industrial firms gathered for the two day discussion of scientific management development heard Mr. Pleasants say: "A business which operates successfully . . . does far more for more people than any amount of discussion about changing our economic system around. There is probably no other group which yields as much influence over the fortunes of all of us as those in the profession of management."

The following qualifications to be looked for in selecting management personnel were listed by Mr. Pleasants: Good character, good mental equipment, initiative and the ability to work well against time, open-mindedness and a liking for and an understanding of people as against things.

Barnes Joins Lever

The appointment of John K. Barnes to the public relations staff of Lever Brothers Co., Cambridge, Mass., was announced last month. Previously Mr. Barnes was supervising editor of the Ford Motor Company's employee publications chain in Dearborn, Mich.

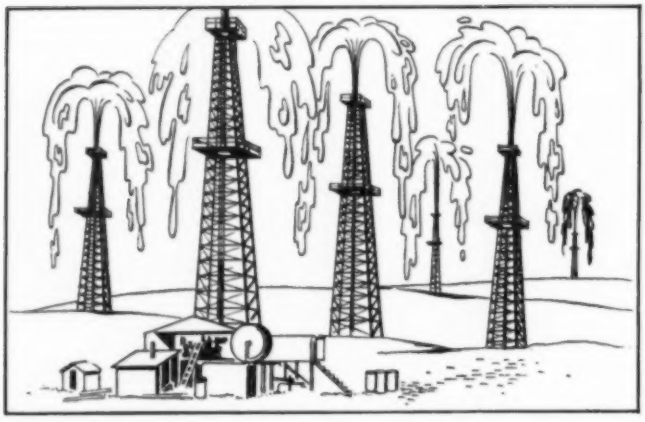
TGA Section Meeting

The Scientific Section of the Toilet Goods Association is meeting at the Starlight Roof of the Waldorf-Astoria Hotel, New York, Dec. 9. The meeting is an all-day one, with luncheon served at one o'clock. Included in the papers being discussed is one titled "Some New Methods for the Determination of Consistency of Petrolatum and Waxes" by A. Kinsel of the Daughterty Refining division of L. Sonneborn Sons, Inc., New York. "Current Problems in the Regulation of Cosmetics under the Federal Food, Drug and Cosmetic Act" is to be discussed by George P. Larrick, Associate Commissioner of Food and Drugs, Food and Drug Administration, Federal Security Agency.

New Metal Cleaner

A new metal cleaner, "Formula #40," was announced recently by John C. Charles Co., Los Angeles. The new paste product is applied by damp cloth, fingers or brush and allowed to stand for about half a minute. Following application "Formula #40" is wiped off. It is said to be effective on brass, chrome, copper, monel, nickel and aluminum. The new cleaner comes in a six ounce household size to retail for 69 cents; a 21 ounce commercial size that sells for $2 and a 12 ounce tube to sell for $1.50. Distributorships are available in all parts of the United States and the product is being backed by advertising in national magazines, radio and newspapers.

Why this...



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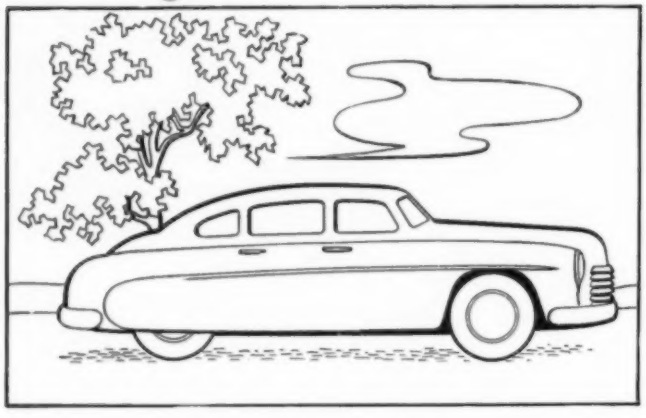

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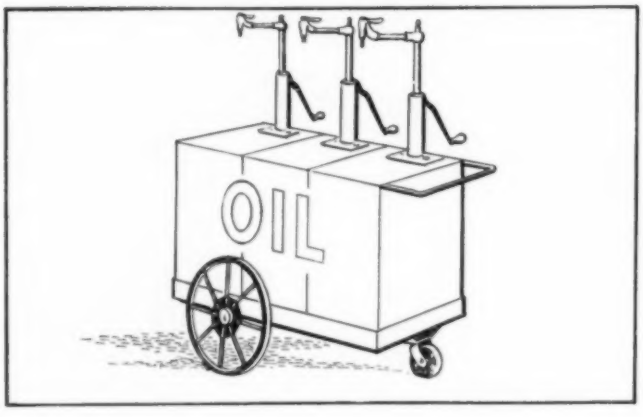


ALMOST 30½ MILLION passenger cars were manufactured between 1932 and 1946.

In 1932, motorists bought close to 258 million barrels of motor oil. In 1941, motorists bought almost *twice* this much.

Hats off to the automobile and oil industries which made this dramatic progress possible!

Yet—believe it or not—there was a packaging problem in 1932 which, when solved, speeded up this progress.

The problem was to put oil in individual containers, sealed at the refinery, which maintained brand identity at point-of-sale . . . which were clean and easy to handle and open . . . and which could be nationally advertised to the ultimate consumer—the car-owner.

That problem was solved by the "Refinery Sealed" container . . . another Canco "first."

This is just one more example of how Canco-engineered packages have brought a product to more people more conveniently.

Can we do the same for your product?

AMERICAN CAN COMPANY

New York • Chicago • San Francisco

This trademark CANCO *is your assurance of quality containers. Look for it!*

Soap, Detergent Mfrs. Meet

The annual meeting of the Soap & Detergent Manufacturers Association will be held at the Hotel New Yorker, New York, Jan. 25, 1949. Although program details have not been definitely decided upon as yet, it is believed much of the discussion will be of the forum or clinic type. On the subject of taxes and taxation, J. L. Seidman of Seidman & Seidman, Washington, D. C., tax attorneys, will speak. Raw materials, synthetic detergents, new plant equipment and methods of producing soap are expected to be covered at the meeting.

Davies-Young to Move

Davies-Young Soap Co., Dayton, O., recently acquired buildings and land on Albany St., Dayton, to which the firm expects to move some time early in 1949. At present, the buildings are being remodelled to permit streamlined production and to consolidate all operations in one area. The main building of the group is a four story brick structure that provides 80,000 square feet of floor space. The remaining buildings will add another 55,000 square feet. The new plant, located on a site of approximately five acres, is served by the Big Four and Baltimore & Ohio railroads.

"Chiffon" Xmas Promotion

A special Christmas promotion on behalf of its "Chiffon" soap flakes was announced recently by Armour & Co., Chicago. Dealers carrying "Chiffon" flakes are being offered a Christmas premium package of 66 assorted Christmas wrappings. The premium package is available for a "Chiffon" box top and 25 cents. In addition, Armour is offering dealers special "Chiffon" Christmas displays with posters, banners and window streamers.

Controllers Elect Siddall

K. Y. Siddall, comptroller of Procter & Gamble Co., Cincinnati, was recently elected president of the Controllers Institute of America. A member of the Institute since 1938, Mr. Siddall has served as a national director since 1944. He was president of the group's Cincinnati Control in 1943-44, after serving successively as treasurer, secretary and vice-president. L. W. Jaeger, secretary and treasurer of

K. Y. SIDDALL

Avon Allied Products, Inc., New York, was elected treasurer of the Institute. He joined the organization in 1936 and was assistant treasurer for the past eight years.

Drug, Chemical Band Dines

The mid-year dinner of the Drug and Chemical Band, a laymen's group that makes an annual retreat to Mount Manresa, Staten Island, was held Nov. 19, at Fontainebleau Restaurant, New York. John J. Toohy, vice-president of E. R. Squibb & Co., Brooklyn, was toastmaster. The Rev. Thomas Moore, S.J., Manresa retreat master, was the guest of honor.

Treffler Is Consultant

Andreas Treffler, soap chemist and writer on soap subjects, recently announced his intention of becoming a consultant on soaps, detergents, oils, emulsions, polishes, waxes, insecticides and disinfectants, germicides and related chemical specialties. He will make his headquarters at 66 Camden Road, N.E., Atlanta, Ga.

New Schimmel Perfume

Schimmel & Co., New York, recently issued a folder on its new specialty, "Osmodor Coeur de Rose 4146." Ways in which the new material may be used are outlined and listed in the four page folder, which also carries a card scented with the new rose fragrance perfume.

A.A.S.G.P. Meets Jan. 26-27

A two day meeting, January 26 and 27, at the Hotel Commodore, New York, has been announced by Roy Peet, association secretary, for the Association of American Soap and Glycerine Producers. Following the pattern of last year's very successful meeting there will be numerous social features and a group of outstanding speakers. The morning session on January 26th will be concerned with the business outlook, the principal address to be made by A. B. H. Kaplan, senior consultant for Brookings Institution. The luncheon speaker will be Adm. Ross T. McIntire, former Surgeon General of the U. S. Navy and now connected with the American Red Cross.

The afternoon session will be devoted to technical and marketing research, with a list of speakers to be announced later. Directors will be elected at this session and will meet after the open meeting adjourns. A cocktail party will be held between six and eight p. m.

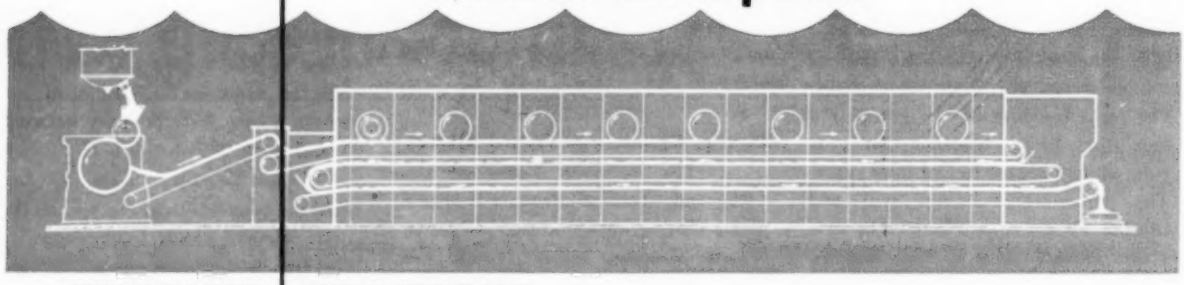
On Thursday morning, Jan. 27th, the convention group will be the guests of McFadden Publications at breakfast. Group meetings will be held during the morning by the potash group, the glycerine group and the bulk soap group. Association activities will be discussed at the afternoon session.

The banquet will be held the evening of Jan. 27th, with the four national radio chains providing talent for an elaborate floor show. James Reilly of Colgate-Palmolive-Peet Co., who acted as chairman of the committee in charge of last year's meeting, is again making the arrangements for this year's meeting.

New C-P-P Dentifrice Tube

Colgate - Palmolive - Peet Co., Jersey City, N. J., recently announced a new tube size for its "Colgate Ribbon Dental Cream," which will consist of a five-ounce economy size to retail for 59 cents. The toothpaste also comes in 10, 23 and 41 cent sizes. The new size will be promoted in all "Colgate Ribbon Dental Cream" advertising.

takes both for maximum speed



PRECISION ENGINEERED CHILLING MACHINE

CAREFULLY DESIGNED DRYER

IN SOAP DRYING, TOO . . .

Speedy and uniform flake soap drying can be accomplished only when the ribbons coming to the dryer are uniform—and conditions within the dryer are carefully controlled. Fast drying may be accomplished with unevenly formed ribbons—but the finished results will not be uniform. To combine speed and uniformity into one efficient operation requires a system that will assure carefully formed ribbons and accurately controlled drying.

To meet the most rigid requirements in the manufacture of flake soap—the Proctor system is "precision engineered" equipment. Carefully designed and built, the chilling machine produces ribbons of uniform width and thickness. Despite the accuracy to which this is machined and built—it possesses a ruggedness that assures consistent performance over a long period of time.

The dryer allows for close control of all factors that affect flake soap drying. The temperatures, air circulation, speed of conveyors which carry ribbons through—all may be regulated to meet the individual requirements of the soap being dried and the output needs of the plant.

You'll experience new efficiency in flake soap drying when you first operate this modern, balanced, completely automatic system. Write today for details.

PROCTOR & SCHWARTZ • INC •
625 TABOR ROAD •
PHILADELPHIA 20 • PA •

New Haviland Soap

A new toilet soap that is claimed to have an unusually long lasting perfume fragrance was announced recently by Ann Haviland Laboratories, New York. The new soap, "Perfume-Soap," is packaged three 3¾ ounce cakes to retail for $1.50. Perfumes and colors of the soap match the five Ann Haviland perfumes for which they are named: orchid for "Wood Violet," mauve for "Purple Lilac," sky blue for "Blue Hyacinth," beige for "Carnation" and green for "Lily of the Valley." Cooperative newspaper advertising is being used to launch the new soap product.

Robert Gould Dies

Robert P. Gould, 60, for many years in charge of purchasing for the Heyden Chemical Co., New York, and a member of the Executive Committee of the Salesmen's Association of the American Chemical Industry, died in New Rochelle, N. Y., hospital on November 21. Although Mr. Gould had been in poor health for some time, having retired from Heyden activities three years ago, his death was sudden and unexpected at this time.

The funeral was held on Nov. 24 with a Solemn High Mass at St. Augustine's Church, Larchmont. He is survived by his wife, Elizabeth Parker Gould, a daughter, Mrs. Jane E. Carey, and a son Robert Thomas Gould.

Bubble Bath Taxable

Reversing a previous ruling that bubble bath preparations having a soap content higher than five percent and recommended for cleansing purposes are not taxable, the Bureau of Internal Revenue recently stated that all bubble bath preparations and similar foaming bath products, regardless of whether or not they are perfumed and regardless of the soap or detergent content are products used or intended as toilet preparations and are subject to the 20 percent Federal excise tax.

New Merck V.P.'s

Four new vice-presidents were appointed recently by the board of directors of Merck & Co., Rahway, N. J. The new officers and their departments are: Reginald P. Lukens, production; Eugene J. Lyons, personnel; Blythe M. Reynolds, engineering and purchasing; and Dr. J. L. K. Snyder, domestic sales.

DR. J. L. K. SNYDER

Effect of Coupons on Sales

Studies made on the consumption of soaps and detergents over a period of seven months in Cincinnati and Philadelphia by National Transitads, Inc., Chicago, indicate that offerings of coupons and premiums do not enlarge the market, but merely shift consumer preference from one brand to another. In reaching this conclusion, the agency maintained consumer panels in the two cities who kept a record of purchases made by a number of representatives families from Jan. through July of this year.

In Philadelphia, the average expenditure per family for packaged soaps and detergents was $1.31 in Jan. In July, after an extensive special-offer drive by three manufacturers, the average expenditure per family was only $1.27. Furthermore, not once during the 7-month period did the average family expenditure equal the Jan. figure.

Similar results were obtained in Cincinnati. At the beginning of the 7-month period, average expenditure per family was $1.69 for the month. Seven months later, also after special offerings, the figure was $1.53.

The survey indicated that promotion does exercise a visible effect on brands bought, but there is no indication that the gains made are lasting.

SOCMA Names Killheffer

Officers nominated for the coming year by the Synthetic Organic Chemical Manufacturers Association at their Nov. 10 monthly luncheon meeting at the Hotel Commodore, New York, include: Dr. Elvin H. Killheffer of E. I. du Pont de Nemours & Co., Wilmington, Del., for president; Wyly M. Billing, Hercules Powder Co., Wilmington, vice-president; Dr. Eric C. Kunz, Givaudan-Delawanna, Inc., New York, second vice-president; Charles M. Richter, Pharma Chemical Corp., New York, treasurer. John P. Remensnyder, Heyden Chemical Corp., New York, and Benjamin M. Van Cleve of Sherwin-Williams Co., New York, were nominated for the board of governors. The election takes place at the group's 27th annual meeting, the evening of Dec. 8, at the Hotel Commodore. The board meets at 4:00 p.m., followed by the annual business meeting at 5:00 and the social hour and dinner at 6:00 and 7:00, respectively. Georges F. Doriot, professor of industrial management and manufacturing at the Harvard graduate school of business administration is to talk on "Current Aspects of Industrial Management."

Dr. W. S. Calcott of E. I. du Pont de Nemours & Co., Wilmington, Del., spoke at the November 10 meeting on "The Chemical Industry in Germany." He showed how Germany's aim of becoming almost completely independent of outside sources for chemical raw materials was frustrated.

At the meeting, Dr. Samuel Isermann, formerly of Patent Chemical Co. and Dr. R. C. Jeffcott, retired official of Calco Chemical Division of American Cyanamid Co., New York, were elected honorary members.

Meeting dates for next year were announced as January 12, February 9, March 9, April 13, May 11, June 7-9, annual outing, September 14, October 13 and November 9.

William Kiefer Dies

William F. Kiefer, for the past eight years representative for George Lueders & Co., New York, in Philadelphia and the surrounding territory, died at his home there Nov. 14.

ORONITE CHEMICAL COMPANY

REG. U. S. PAT. OFF.

THE NAME TO WATCH IN CHEMICALS

D-40 DETERGENT GIVES MORE SUDS AT LOWER COST

D-40 Detergent is economical to use. It has exceptional surface active properties and high foaming ability in low concentration.

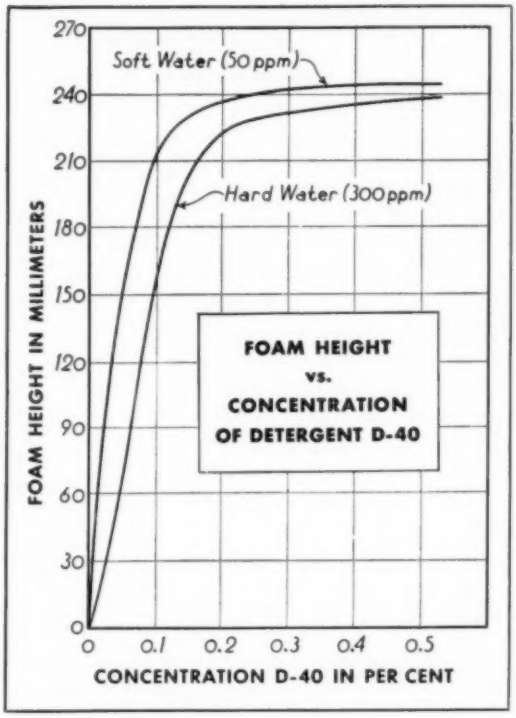
Here is a detergent that can be easily and economically blended with other materials. D-40 is an excellent cleaner by itself, improves other cleaners and gives better performance.

This neutral product is not harmful to delicate fabrics . . . gives quicker "break" . . . easier rinsing.

For more detailed information contact one of the offices listed below.

TESTS SHOW GREATER FOAMING PROPERTIES

The outstanding foaming ability of D-40 Detergent is shown by results of foam height tests (Ross-Miles method) in 300 ppm hard water and 50 ppm soft water at 110° F.



D-40 Detergent also shows increased resistance to defoaming in the presence of fats and oils. It is compatible with alkali, acid, soaps, oils, sulfonates and inorganic salts. Good foaming ability is shown with concentrations of D-40 as low as 0.2 percent.

This outstanding product can help you get better results in all cleaning and washing operations. Ask for D-40—

ORONITE CHEMICAL COMPANY

38 SANSOME STREET, SAN FRANCISCO 4, CALIFORNIA
STANDARD OIL BLDG., LOS ANGELES 15, CALIFORNIA
30 ROCKEFELLER PLAZA, NEW YORK 20, NEW YORK
600 S. MICHIGAN AVENUE, CHICAGO 5, ILLINOIS

Heyden Buys Rumford

Conclusion of the purchase of the assets of Rumford Chemical Works, Providence, R. I., by Heyden Chemical Corp., New York, was announced last month by B. R. Armour, president of Heyden and A. E. Marshall, president of Rumford. All of the assets of Rumford were acquired by Heyden in exchange for 99,438 shares of Heyden common stock and the assumption of outstanding liabilities. The stock will be distributed pro rata among Rumford holders. Rumford will be operated as a division of Heyden and the grocery products it makes will be marketed by a selling company, a Heyden subsidiary, to be called Rumford Co. Its chemical products will be merchandised through the regular Heyden sales organization. The Rumford division will be directed by Mr. Marshall, who has been named a vice-president of Heyden. He will also head the sales company.

Rumford is the sixth major acquisition by Heyden in the last three years.

New Conti Program

Conti Products Corp., Brooklyn, recently acquired sponsorship of the radio program known as "Yours for a Song," which is broadcast weekly for 25 minutes over Mutual Broadcasting System. The program is a musical one featuring Alfredo Antonini and a 30 piece orchestra.

At right: Architect's drawing of a new plant, which was started in Chicago recently for Triangle Package Machinery Co. The new plant will just about double present facilities of Triangle in Chicago. The building is designed for manufacturing high speed semi- and fully automatic packaging machines. The new location has a frontage of 290 feet x 350 feet deep. Location is at 55 W. Diversey Avenue.

N. Y. Schools Buy Liquid Soaps, Dispensers

TO provide soap and towels for York City public school children for the first time in the history of the schools, the Board of Education recently purchased 3,605 five-gallon cans of liquid soap, worth $9,180 from Bagley Laboratories, Inc., New York, and 1,200 soap dispensers, worth $5.90 a piece from U. S. Sanitary Specialties Corp., New York. Present plans call for providing childen in the kindergarten and first grade with soap and paper towels. The appropriation made by the Board of Estimate specifically for the purpose of providing soap and towels, the first in the history of the New York public schools, was only large enough to cover the children in their first two school years.

The soap dispensers are of the standard one-quart type, with a few minor variations, such as chrome finish instead of enamel to avoid chipping, elimination of glass guage on front for determining the quantity of liquid soap in the tank and the inclusion of a special vinylite finish on the interior of the tank for prevention of erosion.

The soap for the schools is made to specification, calling for a clear solution, vegetable oil soap, chilled and filtered to be free from objectionable material and odor. It is to have an anhydrous soap content of 15 percent; having maximum alcohol insolubles of .5; maximum free alkali content of 0.2; maximum chloride content of 0.3 calculated as KCL; minimum acid number of 230.0. The soap is to be cut two parts of water to one part of soap.

In addition to the soap dispensers already purchased, the Board of Education will purchase 75 more.

Paper towels are being used by pupils, and are distributed by the teacher in the classroom.

The plan to provide soap and towels for public school pupils comes as the result of the efforts of a number of Parent-Teacher groups which are trying to have the program extended to cover all public school pupils.

Left: New top for the four ounce size of "Toni Cream Shampoo." Features a blue and white pinwheel design with the name Toni in each white stripe. The family packaging color scheme is carried out.

New Magnus Container

Magnus Chemical Co., Garwood, N. J., recently introduced a new five-pound container for its powdered hand cleaner. The new package is designed for industrial plants and others having wall-mounted powdered hand cleaner dispensing units in their washrooms. The dispensers can be refilled directly from the new package by means of a pouring spout.

PQ SILICATES AT WORK

The chart plots the deflocculating and suspending properties of three PQ Silicates on Ilmenite. Also available to you are research studies with ferric oxide, ground mica, graphite, carbon black, and others.
% ILMENITE RETAINED IN SUSPENSION 2 HOURS AT 60° C
N — 1:3.2
C — 1:2.0
METSO — 1:1
.010%
.030%
.040%
.050%
.060%
0.02
0.1
0.2
% SILICATE - ANHYDROUS BASIS

When PQ Silicates are in the detergent solution, you're sure they keep dirt stirred up. The suspending action of PQ Silicates decreases the rate and amount of sedimentation of dispersed solid particles. Here is outstanding performance in dispersing tiny particles of solid dirt into a cloud which does not settle or re-agglomerate. In the suspended condition the dirt is easily flushed or rinsed away. Write PQ for complete information on silicates as detergents and soap builders.

PHILADELPHIA QUARTZ COMPANY
1152 Public Ledger Building
Philadelphia 6, Pa.

Honor 30 Yr. Mennen Man

Arthur Smith, a foreman in the export shipping department of Mennen Co., Newark, N. J., was honored recently upon completion of 30 years with the firm. William G. Mennen, Jr., vice-president, at a ceremony attended by company employees, presented Mr. Smith with a service pin and certificate. A $500 United States saving bond was also given Mr. Smith, who is the third employee of the firm to reach the 30 year service mark.

Bon Ami Earnings Up

Bon Ami Co., New York, and subsidiaries, had a net profit of $1,321,852, equal to $1.34 a common share for the first nine months of 1948, as against $1,272,675, or $1.28 a share for the comparable 1947 period, which included a $830,000 profit on the sale of metal inventories. The company's net profit for the third quarter of this year was $506,627, equal to 52 cents a common share, as against a loss of $188,494, including a tax credit of $87,000 for the third quarter a year ago.

Gordon Resumes Operation

Gordon Mfgrs. & Dist., New Orleans, recently announced the resumption of soap and cleaner manufacturing operations. The firm closed down shortly before the war, when the owner, J. Patrick Gordon enlisted in the Navy, with which he served for four years during the war. The company, which makes a cleaner under the trade name, "Sanus" and a machine dishwashing compound known as "Super-Sanus," has five salesmen covering Louisiana and part of Mississippi.

Wives Buy Toiletries

A recent survey conducted among readers of MacFadden publications showed that wives buy personal toiletries for one-third of the men interviewed by the company's bulletin, "The Wage Earner Forum." Men questioned in the nation-wide panel of wage earners replied that wives bought 28.4 percent of the brushless shave cream; 28.2 percent of the lather shaving cream; 49.8 percent of the tooth paste, 46.5 percent of the tooth powder and 54.7 percent of the shampoo used by their husbands.

HARRY P. SMITH

Mathieson Advances Smith

Harry P. Smith, formerly New York district sales manager of Mathieson Chemical Corp., New York, has been made assistant general manager of sales, it was announced last month. His headquarters will continue to be in New York. Prior to joining Mathieson's sales department in 1944, Mr. Smith, a graduate of Columbia University, was president of George Chemical Co., now a division of Diamond Alkali Co.

New Ultra Synthetic

A new synthetic surface active agent, "Sulframin AB Concentrate" was announced recently by Ultra Chemical Works, Paterson, N. J. Recommended for a wide variety of uses in such industries as those making cleaning compounds, insecticides, germicides and fungicides, the new detergent is a concentrated dodecyl toluene in small flake form.

Johns With Blanton Co.

J. R. Johns formerly of the Packwood Manufacturing Co., St. Louis, and prior to that with the J. R. Watkins Co., Winona, Minn. as research and control chemist, recently became associated with the Blanton Co., St. Louis vegetable oil refiners as control chemist.

P&G Man Makes Change

Lee Odell, formerly of Procter & Gamble Co., Cincinnati, recently became associated with Cresap, McCormick & Paget, New York management engineering firm, as senior associate. At one time, Mr. Odell was with Interchemical Corp., New York.

CD&CA Xmas Party Dec. 16

The annual Christmas party of the Chicago Drug and Chemical Association will be held Dec. 16. Members and friends of the association are being asked to contribute to a "Favor Fund" for gift and door prizes.

Paint Brush Laundry

A laundry for the cleaning, renovation and reconditioning of paint brushes is now being operated in New York under the name Strauss Paint Brush Laundry. The company, in restoring used paint brushes, launders the brushes, replaces missing bristles or hairs and repairs them when necessary. Brushes are returned in approximately two weeks after they are received.

CMRA Sets Meeting Dates

Its schedule of meetings for the remainder of 1948 and the spring of 1949 was announced recently by the Chemical Marketing Research Association. A meeting was scheduled to be held Dec. 9, in Toronto, Canada. The Feb. 10 meeting will be held in New York, while those on Apr. 7, and June 9, 1949, are to be held in St. Louis and New York, respectively. The Oct. 7 meeting, held at the Hotel Biltmore, New York, was addressed on the subject of "Raw Material Sources for the Solvent Industry—Fermentation and Synthetic."

Phila. Quartz Patent

Issuance of a proces patent on the purification of raw water to Harold R. Hay and assigned to Philadelphia Quartz Co., Philadelphia, was announced recently by the company. The patent (U. S. Patent 2,444,774) covers the company's "N-Sol-A" process of preparing activated silica sol, which has been formed by reaction with ammonium sulfate or other salts of ammonia and dilute sodium silicate.

ETHYL ACETOACETATE

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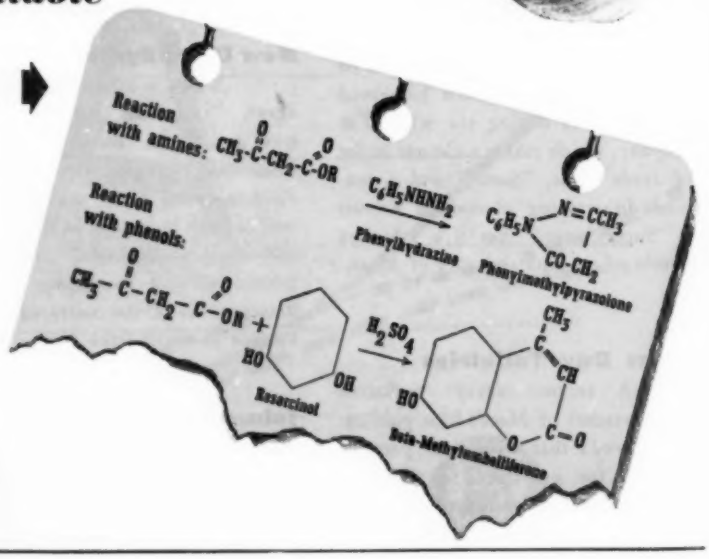
NOW! Greater Quantities for

- Dyes & Pigments
- Pharmaceuticals
- Optical Bleaches
- Stabilizers

Methyl Acetoacetate

Also Commercially Available

The many possibilities of these esters are shown by these typical industrial reactions.



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OTHER ACETOACETATES, SUCH AS BUTYL AND METHYL AMYL ESTERS, can be supplied. You are invited to call or write our nearest office for samples, prices, and additional helpful data on acetoacetic esters.

BIDS AND AWARDS

Sealing Compound Bids

In a recent opening for miscellaneous supplies by the Philadelphia Aviation Supply Office the following bids were received on an unspecified quantity of sealing compound: Dearborn Chemical Co., Chicago, $2,328; National Wax Co., Chicago, $1,462.50; Nox-Rust Chemical Corp., Chicago, $2,490.

Treas. Floor Wax Bids

Among the bids received on 4,100 gallons of floor wax in a recent opening by the U. S. Treasury Department, Bureau of Federal Supply, Washington, D. C., were those of: Technical Chemical Corp., Bethel, Conn., $3 in 55-gallon drums and $3.50 in one or five gallon containers; John C. Stalfort & Sons, Baltimore, 95.67 cents; Unity Sanitary Supply Co., New York, $1.70; G. & G. Paint Co., Washington, D. C., $1.42; Womack Industries, Odorite Sanitation Service, Washington, D. C., $1.15; Beacon Co., Boston, $1.30; American Janitor Supply Co., Washington, D. C., 73 cents; Wilbert Products Co., New York, 76 cents; Ches-White Co., Baltimore, 63 cents; Buckingham Wax Co., Long Island City, N. Y., 59.8 cents; Windsor Wax Co., Hoboken, N. J., 55.7 cents; J. A. Tumbler Laboratories, Baltimore, 69.5 cents; Bri-Test Inc., Bronx, N. Y., 58.8 cents; Oil Specialties & Refining Co., Brooklyn, 67.7 cents; International Metal Polish Co., Indianapolis, $1.40; Liquid Veneer Corp., Washington, D. C., 90 cents; Twin City Shellac Co., Brooklyn, 65 cents; Pur-All Paint Products Co., Bronx, N. Y., 75 cents; Joseph E. Frankle Co., Philadelphia, 68 cents; Fuller Brush Co., Hartford, Conn., $1.35; D. A. Collins Manufacturing Co., Brooklyn, 66 cents; Huntington Laboratories, Huntington, Ind., $1.15; Continental Car-Na-Var Corp., Brazil, Ind., $3.05; S.. C. Johnson & Son Co., Racine, Wis., $1.44; American Products Co., Reidsville, N. C., 47.75 cents; R. M. Hollingshead Corp., Camden, N. J., 69 cents and Trio Chemical Works, Brooklyn, 52 cents.

P.O. Sweep. Compound Bids

In a recent opening for miscellaneous supplies by the Post Office Department, Washington, D. C., the following bids were received on 50,000 pounds of sweeping compound: S. & S. Soap Co., New York, $2.73 cwt; Paxson Manufacturing Co., Philadelphia, $2.65; American Excel Corp., Chicago, $2.40; Dust Bane Products Co., Chicago, $2.57; Capital Floor Sweep Manufacturing Co., Austin, Tex., $1.90; Commercial & Industrial Products, Childs, Pa., $1.70; John Shea Co., Lawrence, Mass., $1.75; Mechanical Sweeping Compound Co., Detroit, $2.

Treas. Soap Bids

In a recent opening on two items of soap by the Treasury Department, Bureau of Federal Supply, Washington, D. C., the following bids were received on, item 1, 51S-1709 and item 2, 51S-1715-960: Trio Chemical Works, Brooklyn, item 1, 53 cents; American Janitor Supply Co., Washington, D. C., item 1, 61.5 cents and item 2, 19 cents; Huntington Laboratories, Huntington, Ind., item 1, $1; Buckingham Wax Co., Long Island City, N. Y., item 1, 66 cents; Harley Soap Co., Philadelphia, item 1, 52 cents, item 2 $2375; Lanair Chemical Corp., Chicago, item 1, 70 cents; Janitors Supply House, Baltimore, item 1, $1.12; Ches-White Co., Baltimore, item 1, 75 cents; Crystal Soap & Chemical Co., Philadelphia, item 1, $1, item 2, 13.1 cents; Superior Soap Corp., Brooklyn, item 1, 60 cents, six gallons per carton; Dixie Janitor Supply Co., Washington, D. C., item 1, 95 cents; E. F. Drew & Co., New York, item 1, 60 cents, item 2, 10.25 cents; Bri-Test, Inc., Bronx, item 1, 44 cents; Midland Laboratories, Dubuque, Ia., item 1, $1.20; R. M. Hollingshead Corp., Camden, N. J., item 1, 89 cents; Industrial Distributors, New York, item 1, 82 cents; J. A. Tumbler Laboratories, Baltimore, item 1, 61 cents, item 2, 14.5 cents; Banner Chemical Products Co., Newark, N. J., item 1, 80 cents; Womack Industries, Odorite Sanitation Service, Washington, D. C., item 1, $1; Davies-Young Soap Co., Dayton, O., item 1, 95 cents, item 2, 14 cents; Vernan Manufacturing Co., Johnstown, Pa., item 1, $1.12; Peck's Products Co., St. Louis, item 1, 76 cents, item 2, 11.75 cents.

P.O. Soap Paste Bids

The following bids on an unspecified quantity of soap paste were received in a recent opening for miscellaneous supplies by the Post Office Department, Washington, D. C.: Crystal Soap & Chemical Co., Philadelphia, 8.6 cents a pound; E. F.. Drew & Co., New York, 8.75 cents; Harley Soap Co., Philadelphia, 8.2 cents; Davies-Young Soap Co., Dayton, O., 10.9 cents; Peck's Products Co., St. Louis, 8.76 cents; R. M. Hollingshead Corp., Camden, N. J., 14.5 cents; General Soap Co., Chicago, 12.5 cents; Knoxall Corp., Indianapolis, 13.3 cents; Clifton Chemical Co., New York, nine cents; Unity Sanitary Supply Co., New York, 22 cents; Fischer Industries, Inc., Cincinnati, 10.45 cents; Chicago Sanitary Products Co., Chicago, 13.5 cents.

Grease Cleaner Bids

Bids were received on an unspecified quantity of grease-cleaning compound in a recent opening for miscellaneous supplies by the Philadelphia, Pa., Navy Department, Aviation Supply Office, from Curran Corp., Malden, Mass., $6,021 and Turco Products Inc., Los Angeles, $6,391.

Phosphate Determination

A rapid method is described for determining sodium pyrophosphate and tripolyphosphate in the presence of ortho- and meta-phosphates. W. R. Cale, *Canadian Chem. & Process Ind.* 32, 741-5 (1948).

Sulfated Castor Oil

Sulfated hydrogenated castor oil is prepared having an iodine value less than 5.5 The material is solid at 25°C. and is water-dispersible. G. W. Fiero, Canadian Patent No. 450,989.

SEASON'S GREETINGS

To our many friends we extend best wishes for Christmas and the New Year

GEORGE LUEDERS & CO.

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Branches: Chicago, San Francisco, Montreal

REPRESENTATIVES: Los Angeles, Philadelphia, St. Louis, Toronto, Canada, Winnipeg, Canada, Waukesha, Wisc.

One of America's Pioneer Importers and Manufacturers of Essential Oils and Aromatics

NEW TRADE MARKS

THE following trade-marks were published in the November issues of the *Official Gazette* of the United States Patent office in compliance with Section 6 of the Act of February 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, fee of ten dollars must accompany each notice of opposition.

SPIDER—This for special device coated with DDT crystals for use as an insecticide. Filed May 13, 1946 by Atlantic Cable Splicing Co., Montrose, Calif. Claims use since Mar. 25, 1946.

PROPOSAL—This for insecticide. Filed Oct. 16, 1946 by Carbide and Carbon Chemicals Corp., New York. Claims use since 1935.

AED—This for furniture polish. Filed Aug. 17, 1946 by Alonzo E. Davis, Montgomery, Ala. Claims use since Mar. 1, 1923.

STARCO—This for window cleaning compounds. Filed May 9, 1946 by Star Chemical Co., San Antonio, Tex. Claims use since 1931.

SANA SCENT—This for cleanser and detergent. Filed Jan. 9, 1947 by Sana-Scent Co., Newburgh, N. Y. Claims use since Aug. 24, 1930.

BRITEX—This for soap. Filed June 5, 1947 by Van Chemical Co., Detroit. Claims use since Mar. 22, 1945.

SAN-CAN—This for chemical preparations for the destruction of garbage odors and insects. Filed Aug. 1, 1946 by Tad Chemical Co., Rochester, N. Y. Claims use since July 17, 1946.

FUNG-I-SOL—This for preparation for treating athlete's foot. Filed Oct. 2, 1946 by F. B. Manufacturing Co., Jacksonville, Fla. Claims use since Feb. 1, 1934.

JEWELITE—This for shampoo. Filed Nov. 8, 1946 by Pro-Phy-Lac-Tic Brush Co., Northamption, Mass. Claims use since April 5, 1940.

ZINSPER—This for zinc soap. Filed Dec. 28, 1946 by Witco Chemical Co., Chicago. Claims use since March, 1945.

KEEPKAN—This for liquid cleaner for paint brushes. Filed Jan. 27, 1947 by Howe Co., Branford, Conn. Claims use since Feb. 10, 1941.

PRO-KEM—This for liquid chemical boiler scale remover. Filed May 2, 1945 by Progressive Chemical Co., Minneapolis, Minn. Claims use since Mar., 29, 1945.

DOC—This for insecticides. Filed Jan. 11, 1947 by Paramount Pest Control Service, Oakland, Calif. Claims use since November, 1938.

INSECT-O-LITE—This for insecticides. Filed Apr. 14, 1947 by Avilite, Inc., Burbank, Calif. Claims use since Feb. 6, 1947.

SHERWIN-WILLIAMS—This for insecticides. Filed June 24, 1947 by Sherwin Williams Co., Cleveland. Claims use since 1902.

PESTMASTER—This for insecticide in powder form. Filed Sept. 5, 1946 by Michigan Chemical Corp., St. Louis Mich. Claims use since July 15, 1945.

The following trade marks are published in compliance with section 13 (a) of the Trade Mark Act of 1946. Notice of opposition must be filed within 30 days of publication and a fee of $25 must accompany each notice of opposition.

McNESS—This in upper and lower case, extra bold, script letters for tooth powder. Filed Sept. 26, 1947 by Furst -McNess Co., Freeport, Ill. Claims use since Oct. 15, 1940.

PLUMB KLEEN—This in upper case, open letters for solvent for cleaning drain pipes, etc. Filed Nov. 14, 1947 by Western Chemical Co., Kansas City, Mo. Claims use since Nov. 25, 1922.

UNDEX—This in upper case, medium bold letters for fungicidal ointment. Filed May 15, 1948 by Dabney Pharmacal Co., Louisville, Ky. Claims use since Apr. 27, 1948.

ALDET—This in upper case, extra bold letters for surface active detergents for use in general household cleaning. Filed Feb. 16, 1948 by Oronite Chemical Co., San Francisco. Claims use since Dec. 15, 1947.

VIDET—This in upper case, extra bold letters for surface active detergents for use in general household and similar cleaning. Filed Dec. 16, 1948 by Oronite Chemical Co., San Francisco. Claims use since Dec. 15, 1947.

SILVER CUP—This in upper and lower case, extra bold, script letters above a cup for powder for cleaning silverware. Filed Apr. 17, 1948 by Silver Chemical Co., Brooklyn. Claims use since Jan. 17, 1948.

VICAR WON—This in open and solid, extra bold, block letters for the word "Vicar" and upper and lower case, medium bold, script letters for the word "Won" for all purpose cleanser in powder form. Filed June 9, 1948 by Virginia-Carolina Chemical Corp., Richmond, Va. Claims use since Apr. 13, 1948.

DOROTHY REED—This in upper and lower case, extra bold, script letters for shampoo. Filed July 24, 1947 by Lander Co., New York. Claims use since Sept., 1937.

WHITEKOTE—This in upper case, bold letters for moth preventive. Filed Aug. 4, 1947 by Galree Products Co., New York. Claims use since Feb. 15, 1935.

SOOTOUT—This in upper case, open letters for soot remover. Filed Nov. 7, 1947 by Lubaid Co., Milwaukee. Claims use since Aug. 10, 1942.

L-S-O—This in upper case, extra bold letters for liquid chemical to be added to industrial fuel oil to remove soot and carbon scale. Filed Nov. 14, 1947 by Lubaid Co., Milwaukee. Claims use since July 1, 1947.

SAFE-N-LEAD—This in upper case, bold italic letters for insecticides. Filed Dec. 23, 1947 by Sherwin- Williams Co., Cleveland. Claims use since Feb. 19, 1940.

SPRED-RITE—This in upper case, bold, italic letters for insecticides. Filed Dec. 23, 1947 by Sherwin-Williams Co., Cleveland. Claims use since June 18, 1936.

GLEEM—This in upper case, medium bold letters for dentifrice. Filed Jan. 9, 1948 by Procter & Gamble Co., Cincinnati. Claims use since Jan. 19, 1939.

TRUBLOND—This in upper case, extra bold letters for shampoo. Filed Mar. 18, 1948 by Whitehall Pharmacal Co., New York. Claims use since Mar. 9, 1934.

"MUST"—This in upper case, extra bold letters for powdered soap and washing compounds for laundry purposes. Filed Jan. 10, 1948 by Scientific Supply Co., Denver. Claims use since Oct. 30, 1947.

GOLDEN KEY—This in upper and lower case, medium bold letters, one word above the other and ascending from left to right for liquid preparations for cleaning glass. Filed Feb. 25, 1948 by Great American Tea Co., New York. Claims use since Mar. 8, 1930.

GRIFFIN—This in upper case, bold letters in the form of an arc above the drawing of a griffin for cleaning fluid for wearing apparel. Filed Feb. 27, 1948 by Griffin Manufacturing Co., Brooklyn. Claims use since Feb., 1915.

TERATONE—This in upper and lower case, extra bold letters for

For outstanding odor value use our

...Persapones...

strong—stable—economical

in your
soap powders and chips
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Available in 3 different types. Write us about your product or send us a sample and let our perfume experts advise you.

schimmel

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cleanser and renovator of terrazo. Filed Mar. 4, 1948 by Carsolite Corp., Maywood, Ill. Claims use since Aug., 1947.

RED MILL—This in upper case, light letters above words "solid neutral red oil soap" for soap. Filed Mar. 18, 1948 by M. Werk Co., St. Bernard, O. Claims use since May 1, 1935.

WATEX—This in upper case, extra bold letters for sudsing cleaner. Filed June 17, 1948 by Procter & Gamble Co., Cincinnati. Claims use since Apr. 25, 1927.

CHIFFON—This in upper and lower case, extra bold, script letters for soap. Filed June 25, 1948 by Armour and Co., Chicago. Claims use since Dec., 1936.

TEANNE—This in upper case, medium bold letters for toilet soap. Filed June 25, 1948 by Nettie Rosenstein, Inc., New York. Claims use since June 17, 1948.

TIANNE—This in upper case, medium bold letters for toilet soap. Filed June 25, 1948 by Nettie Rosenstein, Inc., New York. Claims use since June 17, 1948.

DUNK—This in upper case, extra bold oversize letters for cleanser. Filed June 26, 1948 by Hobb-Swetnam Co., Wichita Falls, Tex. Claims use since since Sept. 1, 1945.

PEARLY FOAM—This in upper and lower case, script letters which are composed of small circles to resemble pearls for shampoo. Filed Sept. 6, 1947 by Nopco Chemical Co., Harrison, N. J. Claims use since Aug. 31, 1944.

ALL—This for detergents for use as a laundry powder. Filed Feb. 20, 1948 by Detergents, Inc., Columbus, O. Claims use since Sept. 30, 1946.

SURGE—This for detergent washing powder in tablet and powder form for washing dairy utensils. Filed July 5, 1947 by Babson Bros. Co. Chicago. Claims use since June 20, 1947.

WERK'S HYTEXAL—This for cleaning compounds for general laundry purposes. Filed Mar. 18, 1948 by M. Werk Co., St. Bernard, O. Claims use since Feb. 20, 1928.

WERK'S L T 60—This for cleaning compounds for general laundry uses. Filed Mar. 18, 1948 by M. Werk Co., St. Bernard, O. Claims use since July 19, 1934.

BRITEN-ZIT—This for liquid cleaner for floors and woodwork. Filed May 5, 1948 by Hillyard Chemical Co., St. Joseph, Mo. Claims use since Oct. 17, 1927.

SOFTRESS—This for soapless shampoo. Filed Nov. 28, 1947 by Andrew Jergens Co., Cincinnati. Claims use since Oct. 28, 1946.

CHEMICAL EXPOSITION

(*From Page 47*)

history. R. L. Lownesbury of the advertising department was in charge.

National Aniline division of Allied Chemical & Dye Corp., New York, displayed its synthetic detergent, "Nacconol N.R." L. R. Flett represented the firm.

General Aniline & Film Corp., New York, showed a number of new non-ionic detergents which are being adapted to household cleaners and the home dishwashing field. Also introduced was a new emulsifier which is used in insecticides in place of kerosene, an advantage, it was claimed, where chlordane is used. A new emulsion capable of imparting increased stability to floor waxes, auto and industrial waxes was also shown. Staffing the booth were Dr. Richard Wood, assistant to the general manager, R. F. Tomlinson, advertising manager, Paul W. Kinney and Jackson J. Ayo III, of the sales force.

U. S. Industrial Chemicals, Inc., New York, featured industrial alcohols, and solvents, natural and synthetic resins, insecticides and repellants. Panels of the display illuminated with flashing lights, bore photo montages and copy which stressed, among other points, the highly nontoxic nature of its insecticides to humans and warm blooded animals. W. Wells Newell, assistant advertising manager, was in charge.

Water treating chemicals and equipment were displayed by fifteen different companies, while makers of acids, alkalis, catalysts, chlorine and other elements of soap and sanitation production, including resins, solvents and waxes, were equally well represented.

Blaw-Knox Co., Pittsburgh, featured their services and facilities for constructing anything from a complete soap plant to specialized processing equipment, while other equipment manufacturers showed machines and instruments embodying new features to meet chemical production needs. Twenty manufacturers alone drew attention to new developments in packaging equipment and supplies.

AT the opening session of the National Industrial Chemical Conference, H. M. Corley of Armour & Co., Chicago, told the story of the place of rosin soap in synthetic rubber. The story was related in his discussion of "Basic Aspects of Commercial Chemical Development."

He told of the work of one major chemical company in the use of rosin acid soap as a dispersing agent for the initial aqueous polymerization of GR-S type synthetic rubber.

"At the start of this program in 1941," he went on, "sufficient research had been finished to definitely determine that one of the worst components in soap used for this purpose were the fatty acid radicals with as little as one percent unsaturated double bonds.

"Abietic acid from rosin is noted for its unsaturation and oxygen absorption characteristics, due to the double bond in the molecule. Believing that rosin acid soap could be used as a dispersing agent for the initial aqueous polymerization of synthetic rubber, the work was continued on the problem in the face of what was believed to be conclusive evidence that rosin acids were highly detrimental.

"The company succeeded in isomerizing rosin acids to obtain a product having acceptable oxygen absorption characteristics. After many tests in synthetic rubber production, using the soap made from isomerized rosin soap, a batch of synthetic rubber was milled.

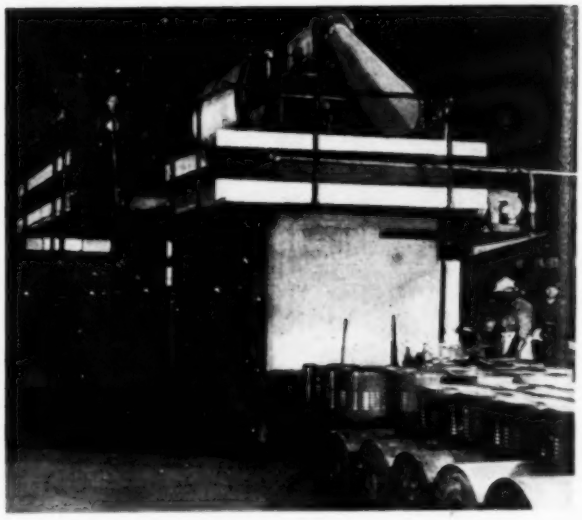
"And then it was discovered that synthetic rubber made with isomerized rosin acid soap as the initial dispersing agent was tremendously more tacky than comparable synthetic rubber made by standard recipes.

"This added tackiness immediately became the most important benefit from the use of rosin acid soap and the project was highly successful."

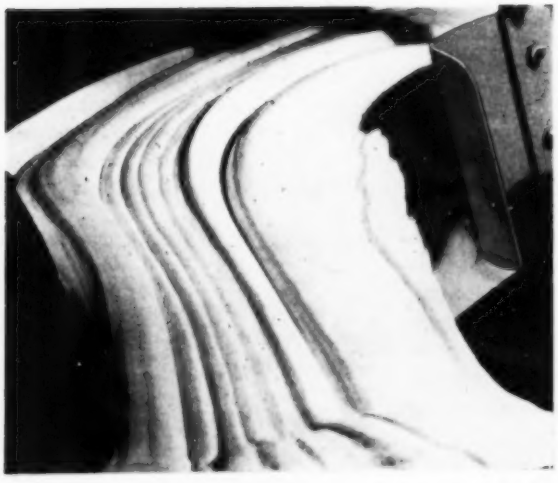
Dr. L. E. Clifcorn of Continental Can Co. was chairman of the exposition committee which organized and managed the show for the Chicago section of the American Chemical Society.

HOW CAN ISCO PRODUCTS WORK FOR YOU?

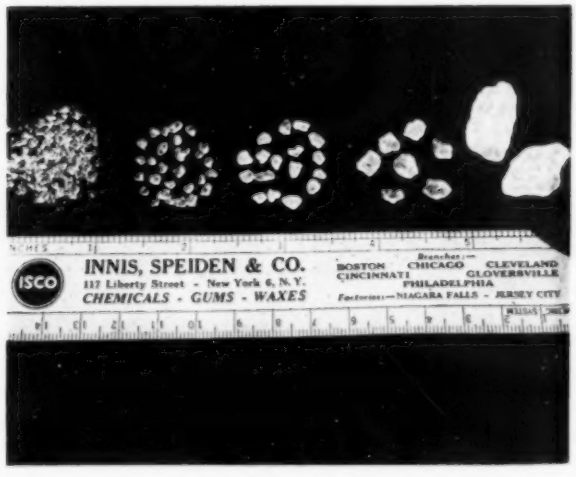
in the Soap and Allied Industries



CAUSTIC POTASH—Available in Flake, Solid, Ground, Broken, and special Walnut size; also liquid, FF 45%/50% KOH; Special Low Chloride Liquid 45%, tank cars and drums. Isco Caustic Potash is a top quality product made in our Niagara Falls Plant. Shown above is one of the machines in our Flaking Dept.



SOAP MATERIALS—In addition to Caustic Potash, among the Isco products for use in the soap industry are Caustic Soda, Potassium Carbonate, Lanolin for superfatting, Absorption Bases for special soaps.



PARADICHLOROBENZENE—Used in manufacture of dyestuffs, intermediates, organic chemicals, insecticides and germicidal compositions, deodorant, soil fumigant, mothproofing. Available in drums, barrels and kegs. Above, Para mixed fines; fine crystals; rice crystals; pea crystals; nuggets. Isco also has naphthalene and orthodichlorobenzene.

You'll Like ISCOoperation

It's one thing to supply chemicals, gums and waxes, another to specify the right material, when you want it and where you want it. Our sales force will cooperate with you from the beginning of your inquiry. Our laboratories are at your service on any problem involving an Isco Product. That's why we say, "You'll like ISCOoperation!"

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RAW MATERIAL MARKETS

As of November 22, 1948

THE fats and oils market tended to become firmer during the past month, with price advances recorded for several oils and fats and copra. Tallow, in addition to rising one cent a pound during the month, came into the news for another reason. Continued and heavy pressure is now being exerted by meat packers, renderers and trade associations for both groups to have tallow and grease taken off world allocation. Already these groups have succeeded in arranging one hearing with the House Committee on Small Business, and another was to take place late in November with the Secretary of Commerce. The interested parties make the point that with an abundant supply of tallow and grease in the United States and the price so low that it is becoming economically unsound to continue to handle tallow and grease, consideration should be given to lifting export controls on these materials entirely. The widening price differential between tallow and grease and coconut oil is cited as an example of how continued restrictions on tallow and grease exports are unfair to renderers and meat packers. They further contend that because of the relatively low price and profits on handling tallow and grease, producers are being forced to reduce collections. Present stocks of tallow and grease are reported to be 300 million pounds.

Spokesmen for the soap industry are reported to have taken the position that if any controls are lifted, all should be removed. They argue further that European countries are in need of higher grade fats and oils for edible purposes, not the kind used mainly in the soap kettle.

Coconut oil continues to be a source of concern to soapers. The shipping strike that began on the West Coast and later was called in East Coast and Gulf ports aggravated a situation that was already bad.

Relief from the west coast strike was obtained in the form of licenses to import through east coast ports 4,500 metric tons of coconut oil from Ceylon and Malaya and 4,500 tons of high lauric oils from Portugese areas, Italian Africa and Liberia, as announced last month by the Production and Marketing Admin-

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Olive Oil
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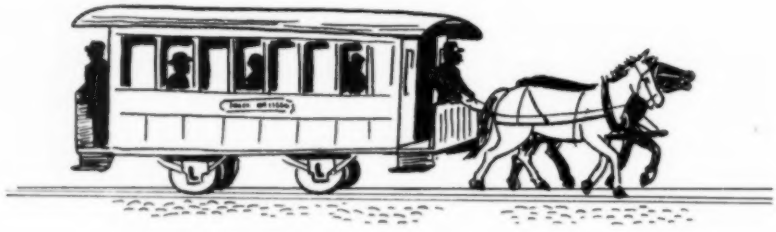
Cottonseed Oil
Palm Kernel Oil
Stearic Acid
Oleo Stearine
Soya Bean Oil
Castor Oil
Sesame Oil
Lard Oil
Palm Oil
Corn Oil
Peanut Oil
Grease
Tallow
Red Oil
White Olein
Fatty Acids
Soap Colors
Chlorophyll
Soda Ash
Sal Soda
Talc
Caustic Potash
Caustic Soda
"CEREPS"
Superfat



Since the days of the Horse Car . . .

since 1838, in fact, we've been supplying the nation's "soapers" with basic raw materials—everything from Acid oils and Adeps Lanae to Waxes and Wetting agents.

If you need one drum in a hurry—or a hundred cars on contract—give WH&C a ring. You'll probably enjoy doing business with this 110 year old organization . . . . a firm that believes in applying the Golden Rule in *business* as well as in private life.

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istration of the U. S. Department of Agriculture. In addition, licenses are being granted for the importation of 5,000 tons of palm oil (representing an exchange for other oils) from the Belgian Congo. The U.S.D.A. also reported unlicensed balances on previously recommended allocations of 7,921 tons of palm oil from the Netherlands East Indies and Portugese areas, 1,000 tons of rapeseed oil from Canada and China, and 100 tons of liquid edible oils from Portugese Africa.

All of the above oils are being licensed for shipment to the United States prior to the end of 1948. Licenses for palm oil will carry restrictions for its importation for use only in the manufacture of terne and tinplate. Licenses for the high lauric oils will be valid for the importation of coconut oil, palm kernels, or palm kernel oil.

Tallow prices in Chicago were up over the advances made recently in the New York market. Fancy grade tallow brought 14½ cents a pound in Chicago earlier this month, as against 14 cents in the East.

Other oil and fat prices which changed during the month were coconut at 24½ cents, up a half cent from last month; peanut oil 20½ cents, also one-half cent over the price a month ago, and soybean at 19 cents a pound, ¼ of a cent over the October price. Copra is now reported to be selling at $265.00 a ton on the Pacific Coast. Cottonseed oil remains unchanged at 19½ cents a pound, and no change is reported in the 22 cent a pound price of corn oil. It is interesting to note that soapers, particularly the smaller ones, often find that published prices of oils, such as coconut, are usually one or two cents below what the soaper must pay to get the oil.

Soapers are awaiting momentarily the announcement of international export allocations of fats and oils for the first quarter of 1948. A meeting was held in Washington, D. C., Nov. 29, with George Pritchard, fats and oils chief of the U.S.D.A., to discuss the allocation.

Coconut oil, incidentally, is one of the hottest topics in the market at present. Predictions as to what the next year will bring are extremely guarded. Although production in the Philippines, main U. S. source of coconut oil, was restored following the war faster than was believed possible, crushing operations there are far below pre-war levels. The main difficulty seems to be lack of machinery. In addition, veterans, who saw at first hand the policy of the Army in dealing with the native coconut oil plantation workers, say that things are never going to be the same. The Army "spoiled" the natives, these former G. I's say, by paying wages many times higher than those prevailing before the war. These wages are considerably more than those paid for comparable work done on British plantations, where the policy of "no work, no food" obtained before and during the war and still does. The "generous" treatment accorded the workers by Americans, officials and otherwise, is responsible for workers on British producing islands trying to migrate to

(*Turn to Page 97*)

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PRODUCTION SECTION

Detergency in the Laundry

UNTIL quite recently it was the general practice in laundering to give what was known as a water break in which the dry load was first treated in plain water or a dilute alkali solution in order to remove water-soluble dirt and very loosely held insoluble dirt. More recent investigations have shown that this is false economy since the subsequent detergent process, using a surface-active liquor starts with the severe disadvantage that it has first of all to displace the inactive water which has penetrated within the fabric. In the most recent laundry washing technique the detergent is added at the beginning of the process, first to act as an efficient wetting-out agent and subsequently to act as a detergent proper.

Improved Laundry Method

IN utilizing a normal fatty-acid soap for washing white work at high temperatures, the dry load of soiled fabrics is placed directly into a soap bath at a concentration of about 0.15 per cent, with a pH value of 9.6-10.0. Rapid wetting-out of the load occurs within a few minutes, when the pH value falls to 9.0-9.2 due to the acidity of the soil. These conditions are ideal for efficient wetting-out since the air-soap-grease contact angle is generally at a minimum over the pH range of 9-10. The degree of hydrolysis of the soap liquor is then increased by reducing the pH to about 7.5 by addition of an acid salt such as monosodium phosphate, or of acetic acid. The acid soap so formed within the capillaries of the fabric, is highly adsorbed on the fiber surfaces and partially dissolves in the greasy film present. Very little detergent action takes place at this stage.

The solution is than subjected to a considerable increase of pH to about 11.2 whereby the deposited acid soap is resaponified to give a high concentration of active soap within the fabric, and particularly at the most heavily soiled areas. The local interfacial tension becomes very low and emulsification of the grease-contaminated soiling is almost spontaneous.

The alkali used to bring up the pH to this level requires consideration. Sodium metasilicate is used, since not only has it a sufficiently high pH but, unlike some of the other alkalis such as soda ash, it has a very beneficial effect on the suspending power of the solution. This is most important in practice since it is not sufficient that the liquor should only have good dirt-removing properties. The removed dirt must be prevented from redepositing on the fabric. Experimental studies to determine the degree to which dirt was deposited on to fabric agitated in a suspension of artificial dirt in various alkali solutions showed that the silicate alkalis had a very definite effect in preventing deposition, while alkalis such as soda ash actually increased it. The theoretical explanation is not known with any certainty, but the laboratory observations have been amply confirmed in practice.

In redeposition of soiling matter on a fabric in a washing machine, the relatively slow process of sedimentation is of only minor importance, the real cause being the energetic collision of the suspended dirt particles with the fibers of the load under conditions such that the force of adhesion on contact is greater than can be overcome by what may be termed the rewashing power of the bath. Such redeposition is most liable to occur in the early rinsing stages where there may still be an appreciable amount of suspended dirt in a liquor having little or no detergent power.

As to the importance of lather in the detergent action, it is a matter of practical experience that if the lather collapses during a washing process, it is a sure indication that the surface activity of the liquor has fallen to such a low value as to be useless. Practically all of the removed dirt may redeposit on the load. In the washing of woolen articles the cushioning effect of the lather is important in limiting the amount of mechanical friction and so reducing shrinkage. A photomicrograph made to show the method of removal of oil from wool fibers, was obtained showing an oil droplet separated from the fiber by a small lather bubble. Attachment of the lather bubble to the oil drop would no doubt exert a strong buoyant effect on it. Lather may therefore be of direct assistance in dirt removal.

Present-day experience in British laundry research confirms the impression that there are no other compounds in quantity which are as complete or as good laundry detergents as is soap when used under proper conditions. Whether this will be

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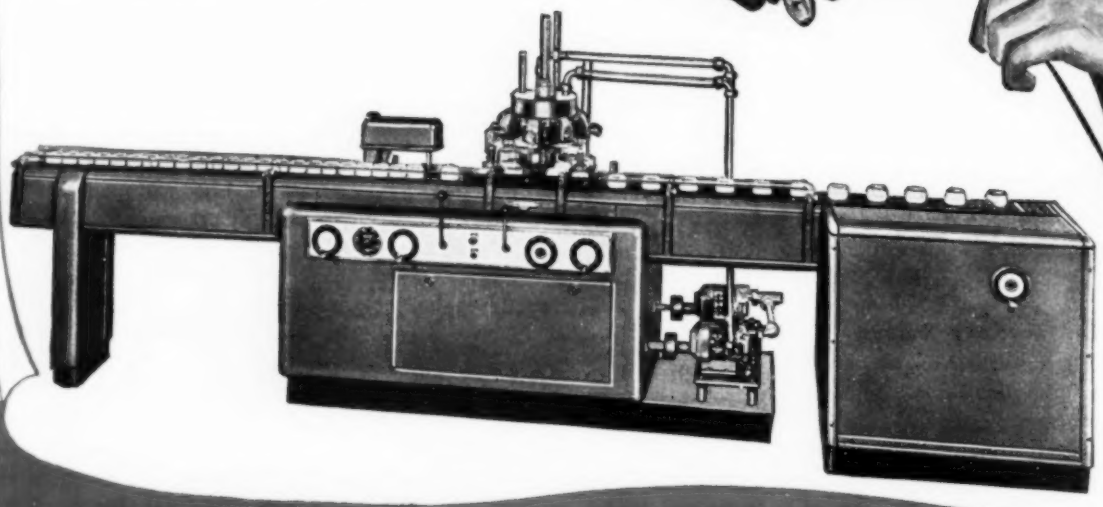

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changed in the future will depend on new developments.

Detergency in the laundry is still an inefficient process from an energy point of view, since it requires something like one horse-power-hour of energy to displace and disperse 8-16 ounces of dirt, even with the aid of a good detergent. Investigation of use of sonic or ultra-sonic vibrations in place of the usual gross mechanical action, is still in the embryonic stage. Whether such a method can be adapted economically to practical detergency is a matter for speculation, although preliminary results are promising. F. C. Harwood and J. Powney, *Chemistry and Industry* 1948, 579-81.

Synthetic Uses

Synthetic detergents are of primary value in connection with wool and other animal fibers which require gentle treatment, but wetting agents are also helpful in the cotton industry, particularly in kier-boiling, the process which involves removal of wax and other impurities from raw cotton by boiling with caustic soda solution. In the silk industry these materials are of particular value in the de-gumming process to remove the natural gum. The detergent stabilizes the emulsion of serecin.

In the rayon industry, a synthetic detergent is needed which is efficient under neutral conditions, leading to reduced attack on the fiber, particularly in the case of acetate rayon which is liable to undergo partial hydrolysis.

In the fur industry in the scouring of sheep-skins, as well as the preliminary soaking of the dried pelts, use of synthetic detergents gives better results than older methods. Alkali concentrations can be reduced and adsorption of the anion produces an excellent handle on the fleece.

Production of high-grade detergents for industrial purposes will depend on the total market available and on the basic costs of raw materials. For this reason, household synthetic detergents are likely to be the same as those available to industry. E. S. Paice, *Ind. Chemist* 24, 456-60 (1948).

Nature of Detergency

Detergents may be evaluated in the laboratory by two methods. Tests may be set up to attempt to emulate service conditions, permitting the relative measurement of some overall effect. Or some primary function such as reduction of surface tension, or the extent of solubilization, may be measured. Such measurements can be used as screening tests, thereby greatly reducing the number of materials ultimately examined under service conditions.

Although no clear picture has yet emerged of the nature and sequence of events which occur when a soil is removed from a surface, it is evident that the replacement of polar soils will be facilitated by the intervention of ions of similar polarity. It is evident too that the same cohesive forces which tend to bind detergent molecules together in colloidal aggregates, may bind together the soil and the hydrophobic portions of the detergent at the interface, giving a readily emulsifiable or soluble complex.

A detergent prevents redeposition of loosened soil on a recently cleaned surface by virtue of the solubilizing power of its colloidal aggregates. Foam flotation and emulsification may also be of importance, but solubilization seems to provide the most important mechanism. Wetting power and the formation of colloidal micelles, originate from a common thermodynamic tendency. Two competitive mechanisms act to reduce the interface between the hydrophobic portion of the solute molecule and water, namely, concentration at an interface and aggregation into micelles. W. D. Scoot and D S. P. Roebuck, *Chemistry and Industry* 1948, 627-31 (1948).

Oleate Systems

The effect of added potassium chloride, in the presence and absence of organic solvents, was studied on sol formation in oleate soap solutions. As concentration of potassium chloride is increased, viscosity rises to a maximum then decreases. The organic solvents used all lowered the viscosity below the blank in proportion to their concentration. As the concentration of ethyl alcohol or acetone is increased, a higher concentration of potassium chloride is required before sol formation occurs. With 1-octanol, and 2-octanone, exactly the opposite is true; at even the lowest concentration of solvent, sol formation occurs at a lower concentration of potassium chloride than in the case of the blank. H. G. Bungenberg de Jong and G. W. H. M. van Alphen, Koninkl. Nederland. Akad. Wetenschap., Proc. 50, 1011-18; through *Chem. Abs.*

Wool-Scouring Emulsions

Owing to wartime unavailability of oleic acid and coriander oil, substitutes were developed for scouring wool, with little or none of these. Mineral-oil emulsions consisting of solar or spindle oil (20-30 per cent), sodium carbonate or 20 per cent ammonia solution (one-two per cent), and water (79-68 per cent) were developed. From two-six per cent of an emulsifier such as "Kontakt" or "Nekal" could be used in place of the alkali. Another form contained 15-25 per cent of solar or spindle oil, five-10 per cent of olein, one-two per cent of sodium carbonate or of 20 per cent ammonia, and 79-63 per cent of water.

The present work involves development of emulsions containing 14-19 per cent of oleic acid, six of triethanolamine, and 80-75 of perfume oil or transformer oil. Others contain ethylene glycol, such as 25 per cent glycol, three of oleic acid, 0.5 of 25 per cent ammonia; also 12.5 per cent of glycol, five of oleic acid, and one of triethanolamine. These result in a partial saving of oleic acid and are odorless, oxidation-resistant, and very stable.

Other types of emulsions were formulated as follows: 300 grams of tall oil, 90 of 36°Be. caustic soda, 110 of water, 600 of mineral or shale oil. This mixture was diluted 3:1 with water. A similar formula contained 150 grams of sulfonated tall oil, 70 grams of 36°Be. caustic soda, 200 of water, 600 of mineral or shale oil, which was finally diluted 3:1 with water. Such emulsions are in use in the plant where they were devised. V. V. Golosov. *Tekstil. Prom.* 6, No. 9-10, 27-8.

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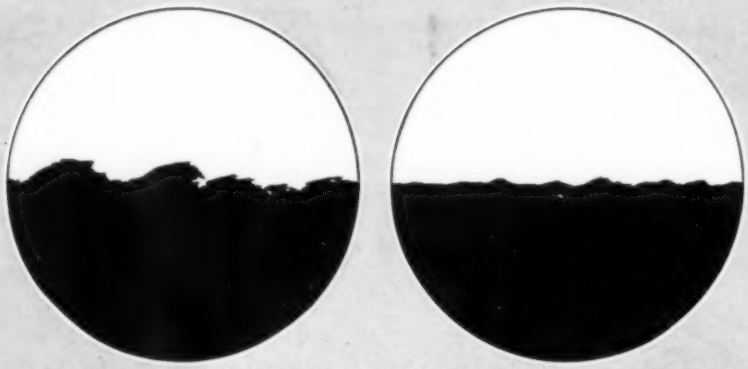

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PRODUCTION CLINIC

By E. G. THOMSSEN, Ph.D.

CHEMISTS or other regulatory officials, whose duties include the preparation of specifications for various products or the enforcement of regulations covered by statutes, are fair in the majority of cases. They cooperate in constructive procedure which sometimes is misunderstood. It is well to remember that the position of these officials is a rather difficult one. They must consider how the attitude they take affects the manufacturer, the consumer and the law makers.. Unforeseen circumstances that may bring severe criticism from any or all of the three groups must be anticipated and guarded against. Because of their decisions, people in city, state or federal regulatory work are subject to blasts of resentment by those whose toes are tread upon.

Every once in a while one runs across a person in this type of work whose bias leads him to take a most unreasonable attitude. Usually such a person is not suited for the job he holds. We had several long sessions recently with an unreasonable official who domineered his underlings and lorded it over others with whom he dealt.

The man in question was writing specifications for certain products used in building maintenance by a large corporation. Water content was anathema to him. As he was economy-minded, he contended that products like soaps, liquid waxes and polishes all had too much water in their make-up. He could not understand why it was necessary to include so much moisture, since it meant larger expenditures in carrying charges, packaging costs and storage space. In his opinion, the water content of almost every product he had under consideration was far too high.

There is some justification for his contention as moisture content has been excessive in certain cases. Yet it is our opinion that the sale of many products would drop in the direct proportion to the amount of water eliminated from them. The official was not too familiar with the field of

DR. THOMSSEN

sanitary chemicals nor with the general habits of all consumers of household cleansers. The predominant trait of all users in the sanitary chemical field seems to be to buy a product to be used *as is*, without adding any ingredient such as water, even though the operation is simple. The man contended that sanitary maintenance men would add their own water if directions call for it. This idea has been tried and failed in numerous cases. Even though economies could be effected by such a procedure, hardly anyone wants to do the extra work. People seem to be looking for less work, not more.

While water is cheap and profitable to sell, at the same time it is a very valuable and necessary raw material for use in many sanitary chemical products. The chemist, of whom we speak, was so obtuse in his attitude he would have reduced the water content in the products to the point where quality would have been adversely affected. The preparation and application of certain products would also be made difficult, and the results unsatisfactory. Many manufacturers of sanitary chemicals are honest, adding just sufficient water to obtain proper end results. The moisture content of a product usually does not result from happenstance but from tests to insure presentable products that do the work as claimed. In such products, it is necessary to include water because of its chemical and physical properties, as a solvent emulsifier and stabilizer. It is possible to cite numerous cases where insufficient water content completely spoiled products such as we are discussing.

Another point which is important to bear in mind concerning water content is purity. It is elementary to most of us that tap water varies in different localities, and in many cases is unfit to use for the manufacture of emulsions, clear solutions and other products. Complaints without number would be certain to pile up if manufacturers did not control the purity of the water they add to their products. They go to considerable pains to use soft, distilled or deionized water in their preparations. Ordinary tap water may cause imperfections that are to be avoided. Suitable water is not to be had in every locality by merely turning on a faucet. Users of sanitary chemicals are hard water minded at this time because of the frequency with which it is mentioned in connection with wetting agents. Manufacturers have an added selling point in the fact that their products do not contain ordinary city water but specially softened and, in many cases deionized or distilled water to produce high quality products. An effective selling detail that is often overlooked might be capitalized on if manufacturers were to point out the nature of their product's water content. Such assertions aid materially in counteracting the idea that water is added merely from the profit motive. For years soapers have been accused of this motive.

There are other chemicals besides water which come under surveillance of regulatory officials. Reputable manufacturers suffer at times because of adulteration or dilution of cheap competitive products. It is our observation that while such items may flourish for a time because of lower

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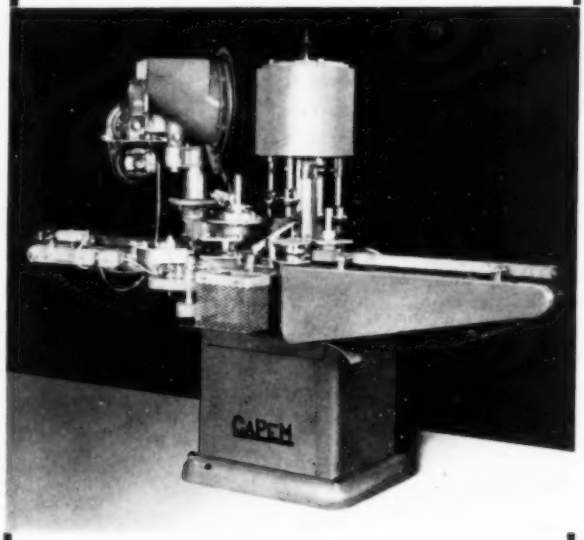

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prices, in the long run products with properly balanced water content or other necessary inert material win out, not only with specification writers, but with the ultimate consumer.

New Books

THERE have recently been brought to our attention three recent books which may be of interest to some of our readers. Harvard University Press has published "The Songs of Insects" by George W. Pierce. The author, a physicist, working in collaboration with an entomologist, reviews 12 years of research work. The book contains descriptions of methods used by insects to make sounds, discussions of the individual sound records, a description of the apparatus which eliminates any supersonic vibrations not produced by insects, as well as many illustrations and reproductions of the sound records themselves. Another recent work in the insecticide field is "Chemistry of Insecticides, Fungicides and Herbicides" by Donald E. H. Frear. This work sets forth detailed information regarding many substances used to eradicate or control living organisms. It includes useful, available information such as is required by manufacturers and consumers of the products discussed. An extensive bibliography is given at the end of each chapter. The last work, entitled "The Essential Oils," is by Ernest Guenther, vice-president of Fritzsche Bros. Co., New York, and well known in the essential oil industry. It is the first volume of a series on perfuming materials. Included are an account if the examination of aromatics and the history, chemistry, biological origin and function of essential oils in plant life. The latter two books are published by McGraw-Hill Publishing Co., New York.

Dry Filler

GLENGARRY Machine Works, Bay Shore, N. Y., are offering a simple, economical, net weight filler. The machine handles many dry products, especially free-flowing ones. The filler consists of two dump hoppers which weigh the material as desired. The dry product is fed to the dump hoppers by two supply hoppers. When the dump hopper receives the desired weight, the electric current is cut off by a slight movement of the weighing beam, which stops the supply of dry material. Next the dump hopper gate at the bottom is tripped open by a solenoid switch and discharges the material into a single guide funnel directly beneath which is the package to be filled. Adjustments may be made for varying speeds of flow as well as different weights. High speed filling is possible with the machine and for heavier packages both dumping hoppers may be emptied at the same time to double up the weight. The filler is well built, the electric components are enclosed and stainless steel is used for parts contacted by the materials being filled.

Corrosion Proof Floor

U. S. Stoneware Co., Akron, O., is offering free, a 64-page booklet, "How to Get the Most out of Corrosion-Proof Masonry." This book includes drawings, diagrams and estimating data on the laying of floors that resist both alkalies and acids. There are frequently sections in a plant or entire lofts where a corrosion-proof floor is an economy.

Marion Mixer

SMALLER manufacturers of machinery in certain cases are in a position to render more prompt deliveries than the larger ones in these days of material shortages. A case in point is Rapids Machinery Co., Marion, Ia., maker of the "Marion Mixer." This company, though classed as a smaller manufacturer, has been making fast deliveries on its "Marion Dry Mixer." The machine comes in three convenient sizes. It has been built for many years and is preferred by many manufacturers of blended powdered products. The "Marion Dry Mixer" easily handles heavy materials because of the unique, heavy-built, mixer cylinder that rapidly and uniformly blends liquids or viscous materials into solids. The arrangement of the mixing blades accomplishes a continuous scooping, pouring and folding action.

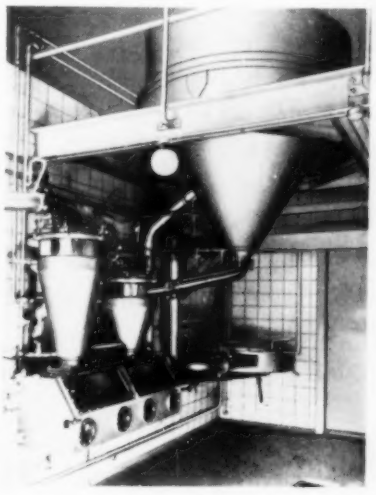
Sodium C.M.C. Uses

The use of C.M.C. in non-soap detergents for minimizing soil redeposition has had much publicity. Its uses in cosmetics, polishes and insecticides have not been as widespread. E. I. Du Pont de Nemours & Co., Wilmington, is advertising the opportunities for improving a wide range of products by including their Sodium C.M.C. (Sodium carboxymethyl cellulose) in formulations as a thickening, film forming, suspending, sizing, and dispersing agent of various grades and viscosities. The company has issued C.M.C.; Properties and Uses" available through the chemical sales division, Explosives Department, Wilmington.

New Lab. Spray Dryer

A new laboratory spray dryer for laboratory development work and small lot production was developed recently by Bowen Engineering, Inc., Garwood, N. J. The new model features a furnace with greater range of inlet air temperature, providing air temperatures up to 750°F., which gives a 30 percent increase in evaporation rate of dryer. Increased diameter feed pipe has been added which will handle viscous solutions or slurries and opens fields for investigation that were previously possible only in large dryers. Also new are stainless steel ducts between gas heater and drying chamber.

The laboratory spray dryer is shipped complete with insulated gas furnace, temperature controls, insulated drying chamber with air driven



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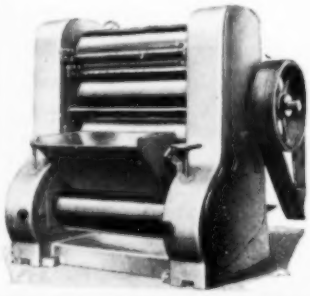

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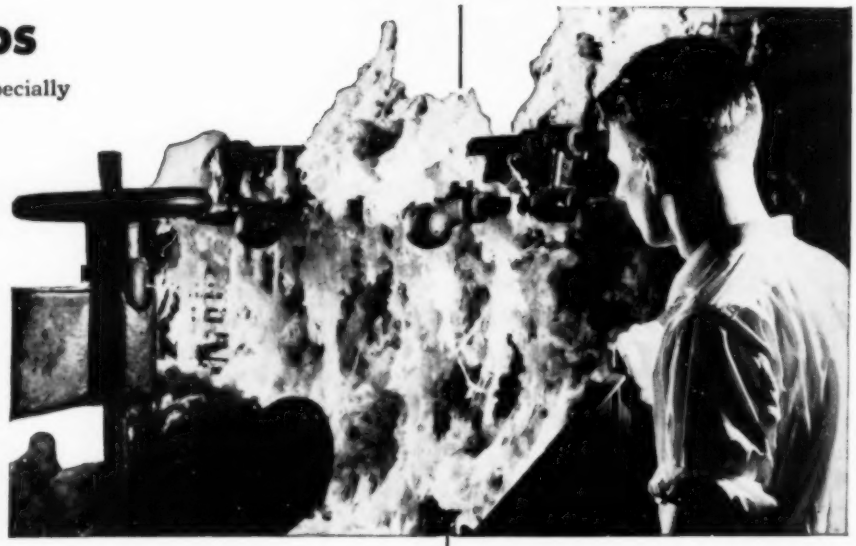

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New Humidifying Unit

Walton Laboratories, Inc., Irvington, N. J., recently announced the development of a new humidifying unit that vaporizes better than one-half gallon of water per hour. The water flow level of the unit, which does not require ducts, special outlets or piping, is regulated by an automatic float assembly. The humidifier's 60 Watt motor is wired in series with a humidistat, insuring automatic operation.

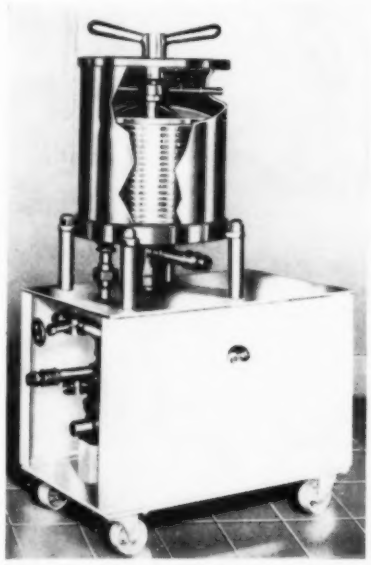
New Soap Cutter

Sharp Brothers, Bayonne, N. J., recently announced the development of an adjustable, continuous soap cutter operated by the soap bar extruder. Descriptive literature on the new machine is available by writing the company at 201 Orient St., Bayonne, N. J.

New Ertel Filter

Ertel Engineering Corp., Kingston, N. Y., recently announced the development of a new positive seal cylinder type disk filter to be known as "Model ECD." The filter, new to the company's line of liquid handling equipment, incorporates a new principle of double closure to insure a positive seal. The filter elements are independently tightened from the cylinder. By this method the use of various types of rigid filter media in any number up to the rated capacity of the filter is permitted. Because the filter is enclosed, there is no loss of liquid due to evaporation or drippage, a desirable feature when handling volatile liquids. "Model ECD" is built so the filter effects a positive seal between the filter medium and the inlet and outlet channels. This arrangement eliminates the danger of by-passing unifiltered liquid.

The filter is arranged to make reloading and cleaning as simple as possible. By removing the head and the cylinder the entire unit is exposed. Standard inlet rings can be substituted for wider inlet (sludge) rings when



it is necessary to absorb considerable amounts of solids. A folder on the new filter is available.

New Vertical Mixers

Sprout, Waldon & Co., Muncy, Pa., recently announced the addition of a new line of vertical mixers that come in 50, 100 and 150 cubic foot capacities. The units are normally furnished with vertical motors and top, V-belt drives. A bulletin on the new mixers, listing advantages, specifications and construction details of new model "VA" vertical mixers is available upon request.

Hardesty F.A. Data Sheets

The availability of three data sheets containing information useful to processors of chemical products using fatty acids and fatty acid by-products was announced recently by W. C. Hardesty Co., New York.

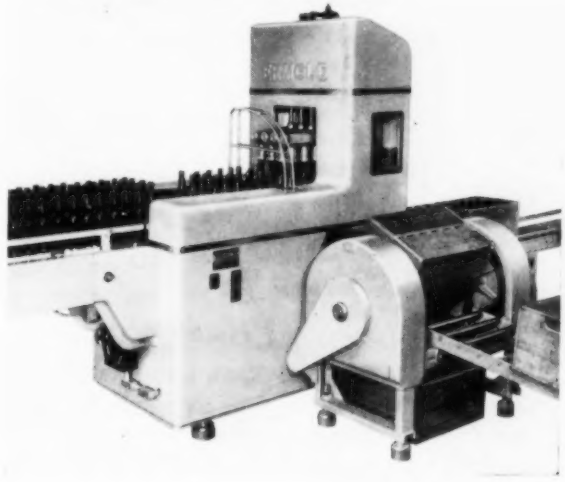
Cast Iron Pulley Booklet

Sprout, Waldron & Co., Muncy, Pa., recently announced the issuance of a 16-page, two-color, 8½ x 11 inch booklet on its line of cast iron pulleys.

New Case Unpacker

A new automatic case unpacker and dumper, shown for the first time at the International Beverage Exposition in Atlantic City, N. J., Nov. 15-19, was developed recently by Edward Ermold Co., New York. The new machine removes standard containers from cartons, deep or shallow cases or trays. It also takes filled or partially filled cases and discharges the containers on to a continuous conveyor. The machine automatically refuses odd size or badly damaged cases and cases containing overlength bottles, and leaves broken bottles in the case for discard. The machine accepts partially filled cases and the grippers have sufficient range to assure pick up of tilted or misaligned bottles.

Speed is variable within a range of four to 15 cycles per minute—output equals the number of containers times the cyclic rate.



Ermold Automatic Case Unpacker and Dumper

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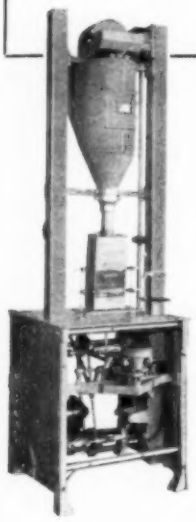
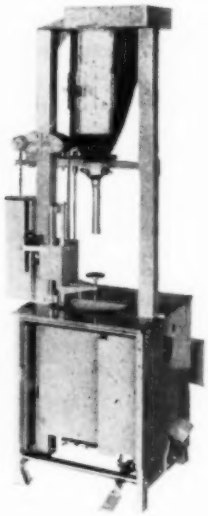
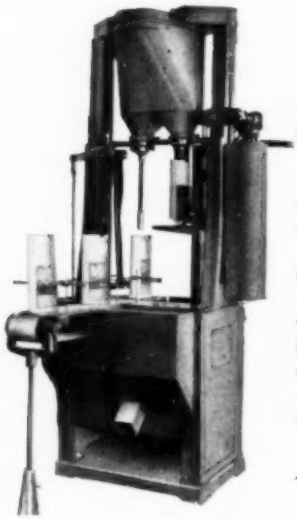


(Left) This G-4 single unit gross weight scale fills by auger feeding the product into the container until desired weight is obtained. One operator . . production 6 to 10 per minute.



(Right) This G-9 single unit machine fills by auger feeding the product into the container — packing with a desired amount of pressure from the bottom to the top. This machine can also be used for filling paste products.



DHG 88 DUPLEX PACKER & WEIGHER

(Left) The Duplex Packer and Weigher is very flexible and accurate. Handles from ½ oz. to 15 lbs. . . . bags, cartons, cans or canisters . . . 8 to 15 per minute with one operator (including checkweighing). Has automatic transfer from No. 1 to No. 2 station and automatic take-away conveyor.

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SOAP PLANT OBSERVER

By John W. McCutcheon

THE Soap and Detergent Section of the American Oil Chemists' Society presented thirteen papers at the Fall meeting of the Society in New York, Nov. 15-17. A few of these are reviewed below.

"The Effect of Temperature Upon the X-Ray Long Spacing of the System Potassium Laurate-Water-n-Heptane."

By O. A. Hoffman and J. W. McBain, Stanford University, Stanford, Calif.

O. A. Hoffman of Stanford University discussed the effect of temperature on the solubility of a solvent in a soap solution. He showed that solvency depends on additional factors other than the Hess effect, which postulates alternate layers of soap and solvent micelles. This is demonstrated by the change of solvency with temperature. No mechanism has been developed to cover this, other than the absorption theory. The data presented indicates the complexity of the problem and the need for further study.

"The Adsorptive Capacity of Cotton for Sodium Oleate."

By K. W. Gardiner and L. B. Smith, Lever Brothers Company, Cambridge, Mass.

L. B. Smith of Lever Bros. showed that cotton absorbed sodium oleate to the extent of about 0.7%. This effect varies with concentration of the soap solution but reaches a maximum at about 0.15% and falls off sharply on either side of this value. The parallel relation between absorbency and detergency was noted but no conclusion could be reached on the matter. The absorbed soap was determined to be the acid soap represented by the formula (Na salt of Fatty Acid) (Fatty Acid).

"The Chemistry of Detergency."

By I. J. Gruntfest and R. M. Young Jr., Rohm and Haas Co., Philadelphia, Pa.

I. J. Gruntfest, Rohm & Haas Co. discussed the chemistry of detergency. It was shown that the removal of soil from cloth is a linear function of the soap concentration. Also that there is a critical concentration of

soap below which soil will not be removed. This data indicates that a reaction between soap and dirt may be a part of the detergency process. Also that micelle formation is not necessary for detergency.

This data while interesting is contrary to that generally accepted. For example, it is known that too high a concentration of soap in the laundry has a tendency to cause redeposition of the soil. Also, it is known that maximum detergency for any type of soap varies with the chain length and temperature used, both factors affecting solubility. Whether or not micelle formation is a factor in detergency, it is certainly a function of temperature and chain structure and would therefore be a coinciding phenomenon at any rate. The data of this paper will be further reviewed when complete details are made available.

"Detergents in the Textile Industry."

By H. C. Borghetty, General Dyestuff Corp., New York.

H. C. Borghetty of General Dyestuff Corp. gave an excellent review on the role of detergents in the textile industry. A plea was made for more uniform methods of testing and evaluating all the factors of detergency. This seems to be a generally desired objective. It was discussed in the November issue of this column. It seems to be a matter of deciding what horse is to carry the load.

Dr. Borghetty pointed out very strongly that there is no quarrel in the textile trade between the use of soap and synthetic detergents. Each have fashioned their own niches. No textile mill can be found that does not use some soap, and likewise none can be found that does not use synthetics. Soap is the best and cheapest scouring material and is used as long as neutral or alkaline conditions are compatible with the process. An example of where soap cannot conveniently be used is where scouring must be done between two acid treatments. Here, the cost of rinsing, neutralizing, scouring and re-acidifying would be out of line with the economy of using an acid resisting synthetic detergent. Also, where a scouring operation follows an acid treatment, very frequently a synthetic detergent can be made to play a dual function, first as a wetting agent in the acid bath and then as the scouring agent.

In general, he stated that soil removal in textile operations is of an entirely different type than that met in laundry practice. The campaign for the use of carboxy methyl cellulose as a soil suspending agent in such laundry operations proves the weakness of the detergent claims made for the alkyl aryls. The fact that low detergency on cotton existed without being mentioned until a possible cure for it appeared, indicates the need of standardization of tests in this field. We heartily agree with this viewpoint.

"The Effect of an Non-Ionic Detergent on the Detergency of Alkyl-aryl Sulfonates and Soap in Hard Water."

By George E. Barker, Atlas Powder Co., Wilmington.

Dr. G. E. Barker of Atlas Powder Co. discussed the use of non-ionics as assistants to alkyl aryls and soaps. The method of conducting the tests was gone into in considerable detail and from the keen discussion evoked, it was clear that further standardization is desirable for comparative results between groups. It

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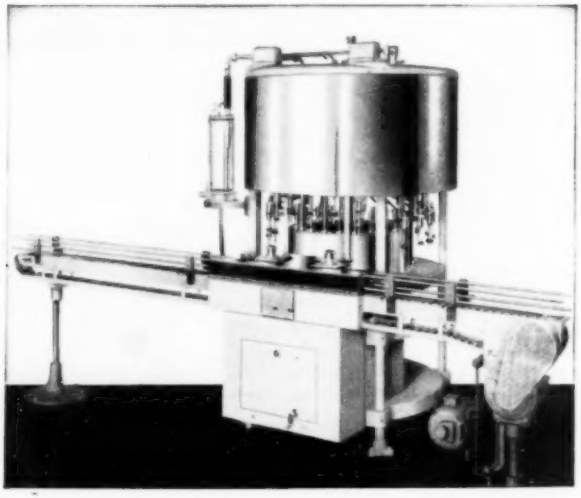

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was shown that the addition of non-ionics substituted for alkyl aryls to the extent of 20% increased detergency between 30-40%. With a lauryl sodium soap, the increase was only 19% when substituted on a 50/50 basis. Tallow soap showed a greater improvement, but lather value was decidedly decreased. The general impression was left that the use of non-ionics was highly desirable in alkyl aryls but possibly of little help with soaps. The discussion was actually based on the use of "Renex," an ethylene oxide condensation of fatty and rosin acids. What effect other type non-ionics might have is not known, nor does work appear in progress concerning them.

"The Determination of Potassium in Soap and Mixed Caustic Lye."

By W. J. Miller and J. T. R. Andrews, Procter and Gamble Co., Ivorydale, Ohio.

Dr. J. T. R. Andrews of Procter & Gamble outlined a method for the determination of potassium in the presence of sodium for use by soapers. It is an adaption from the method of H. H. Willard et al reported in 1941 and consists of precipitating potasium periodate from a 50/50 mixture of ethyl acetate and alcohol.

Acidification of the sample is done with HNO_3. The precipitated KIO_4 may be dissolved and titrated with N/10 thiosulphate. Data from numerous co-operative laboratories showed remarkably consistent results. The author believes this is an extremely important contribution to analytical methods and will report further on it in this column when details are released.

* * *

Oil production should be high during the coming year according to statistics released by the Department of Agriculture. This will tend to reduce prices which will reflect a tighter situation in retail synthetic detergent production and sales. Maximum retail sales of 400 million lbs. (35% active basis) are estimated for 1949.

* * *

"Dial"—Armour's new deodorant soap contains AT-7, [bis (3, 5, 6 - trichloro - 2 - hydroxyphenyl) methane)] as the active ingredient. It is based on a new concept of body deodorization and its development will be watched with interest by this column.

OIL CHEMISTS MEETING

(*From Page* 43)

samples by this method and submitted almost identical results.

IN the kettle boiling operation, the glycerine distribution in the curd and lye layers approaches an equilibrium condition, in which the concentration of glycerine is the same in both layers. According to the paper on "Glycerol Distribution in Soap Boiling Operations" by W. J. Govan, Pacific Soap Company, San Diego, there is a lower glycerine retention on lyes of soft grained soaps as compared to the hard grained soap; the difficulty in mixing hard grained soaps was offered as a possible explanation. One of the conditions given for obtaining the best results on hard-grained soap was to insure a thorough mixing by a vigorous boiling procedure. The final conclusion, as presented in the paper, was that there is little, if any, glycerine loss in the actual kettle operation.

THE vital role played by glyceridic oils in our national welfare was reported by P. H. Groggins, U. S. Dept. of Agriculture, Washington, D.C. in his paper "Glyceridic Oils in Our National Economy." The maintenance of industrial operations, our national defense and domestic use of glyceridic fats and oils necessitate an assurance of an adequate present and future supply. Ten percent of the total value of all the farm crops is represented by the oil and fat supply, and although our domestic production has increased two-fold in the last twenty years, fifty per cent of our requirements were imported in 1947.

Problems confronted in adjusting the requirements of supply and demand include the increased consumption of manufactured oils, as in the field of printing inks and lubricants, and actual problems confronted in processing of the oils; in the soy bean industry, two of the main problems deal with improving the quality and the stability of the oil. Climate and particularly economics further limit an increase in production of oils in the United States.

An outlook to the future indicates an increase in consumption per capita of fats and oils, based on population trends and an improvement in nutritional standards of living.

A limit as to oil consumption, however, is evident in the competition with products derived from non-agricultural sources, several of which became quite popular during the war, and today constitute another problem confronting the oil industry.

K. S. MARKLEY, Southern Regional Research Laboratory, New Orleans, in his paper on "Oil Palm Resources in the American Hemisphere" reported on the results of various surveys of oil palm resources in Mexico and Brazil. Data as to the potential volume of oils available, and reasons for lack of exploitation to date are included in the report.

"THE Semi-Continuous Deodorization of Fats" in a new deodorizer was explained by A. E. Bailey, The Girdler Corporation, Louisville, Ky. The equipment for the new process involves a baffle arrangement and cover, which prevents completely the flow of the material back into the oil, thus overcoming one of the main problems of the batch process, which permits reflux. Leakage of air into the deodorizer is eliminated, and steam consumption is greatly reduced, thus reducing costs.

In deodorization, it is advantageous to use the highest possible temperature. Steel is harmful to the stability of oils at high temperatures, and its use as the construction material of the equipment would limit the temperatures of operation. The new deodorizer is made of nickel. Oil losses in the deodorizer range from .2 to .3 per cent plus the free fatty acids removed. The color reduction is equivalent to that encountered in the batch process.

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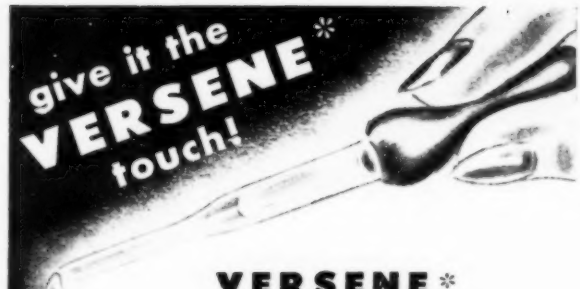

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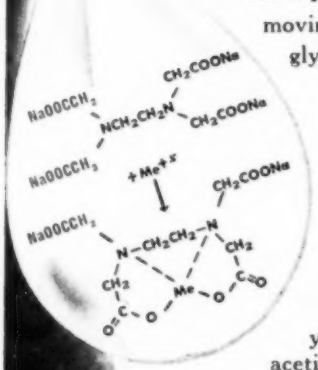

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Improved Potash Soap

Potash soaps containing small amounts of potassium hydroxide, potassium carbonate, or neutral salts form unstable solutions and separate within a few days. Neutral soap solutions may be prepared of unlimited stability, better consistency, lathering capacity, and washing action. Modifications to achieve this include (1) adding potassium hydroxide previously treated with barium chloride to remove potassium carbonate; (2) adding commercial potassium hydroxide with one to two per cent of surplus fatty acid; and (3) adding less than the equivalent amount of commercial potassium hydroxide to the oil or fatty acid. The mixture should be kept for at least 30 minutes near its boiling point. Addition of one per cent of a partial ester of a fatty acid such as the minolaurate of glycerol, ethane diol, or butane tetrol, improves lathering, stability, and washing action. M.J.H.E. Hustinx, British Patent No. 601,651.

Metal Soaps

Metal soaps are made in the usual manner from fractions of tall oil or tall-oil fatty acids, which contain appreciable amounts of emulsifying substances. These are generally the final fractions of the tall oil and the first fractions of the fatty acids. H. O. V. Bergstrom, G. B. Heijmer, and K. G. Trobeck, Swedish Patent No. 120,174; through *Chem. Abs.*

Detergent Bar

Physically stable briquets are made containing only 0.25-5 per cent of synthetic detergent, the bulk of the active ingredient being a mixture of alkaline salts. Water is present in an amount of 30-50 per cent, trisodium phosphate and (or) soda ash 10-50 per cent, borax one to 30 per cent, and sodium polyphosphates up to 50 per cent. The polyphosphates may include up to 15 per cent of sodium tetraphosphate and sodium hexametaphosphate. The polyphosphates and synthetic detergent are added last and the fluid mass is cast in molds. The higher the rate of the borate constituent, the lower the rate of solution. J. D. MacMahon, to Mathieson Chem. Corp. U. S. Patent No. 2,444,836.

Solubilizers for Sulfonates

Fairly high concentrations of solutions of synthetic detergents of the alkyl aryl sulfonate type can be prepared by use of certain solubilizing agents, particularly 0.2-2.5 per cent of dicyanodiamide. The exact amount depends on the concentration of the solution and on the minimum storage temperature. For example, a one per cent concentration of dicyanodiamide stabilizes a 16 per cent aqueous solution of a keryl sodium benzene sulfonate so that the cloud point is -1°C. and the clear point 15°C. N. A. Shepard, to Am. Cyanamid Co. U. S. Patent No. 2,445,975.

Magnesium Carbonate

Detergent preparations containing compounds carrying water of crystallization can be readily milled by admixing a porous powder such as magnesium carbonate. This increases the volume during crystallization. For example a mixture of fatty alcohol sulfate and sodium sulfate contains as an additive three per cent of magnesium carbonate to make it millable. Dobbelman N.V. Dutch Patent No. 61,367; through *Chem. Abs.*

Lignosulfonate Analysis

A more complete determination of sulfite waste liquor components may be made than that of the total-solids method, by use of a new procedure. The sulfite waste liquor is neutralized with caustic soda prior to drying to prevent loss of volatile organic acids and sulfur dioxide. Organic matter is oxidized by a nitric-perchloric acid mixture. The method may be used with either liquid or solid samples and permits ready determination of all cations, silica, and total sulfur, using the material from one digestion. Precision in sulfur determination is equal to that obtained in the Carius method. J. R. Salvesen and D. Hogan, *Anal. Chem. 20*, 909-11 (1948).

Sulfated Oil

Cashew nutshell liquid, 10 parts, are mixed with five to 20 parts of a fatty oil and sulfated by adding 25-100 per cent of concentrated sulfuric acid dropwise with stirring at 30°C. or lower. When all of the acid is added, the mass is agitated for about a half hour, neutralized, washed, collected, and dried. K. G. Kudva and H. R. Kamath, Indian Patent No 31,509; through *Chem. Abs.*

Fatty Acid Separation

Fatty acids from an oil such as soybean oil can be fractionally distilled to give a low-boiling, palmitic-acid fraction, and a fraction containing six per cent of saturated acids which includes about five per cent of stearic acid. The latter fraction is next mixed with five times its weight of butane. The temperature is lowered to 25°F. which causes the saturated acids to crystallize out. The separated liquid phase contains less than one per cent of saturated acids. The crystallization procedure can be performed without a solvent, although use of one is more efficient and greatly improves results. E. W. Colt, to Armour & Co. U. S. Patent No. 2,443,184.

Rust Remover

A paper to remove rust stains is prepared by dipping blotting paper into a saturated solution of citric or tartaric and oxalic acids and letting dry. The paper is used by putting it on the rust stain and wetting with hot water. C. Rolle, Italian Patent No. 412,985.

Bleaching Soap

Soaps, fats, fatty acids, and waxes can be bleached by the action of equal-molar mixtures of chlorite and aldehyde at a pH of about seven. C. A. Hampel, to Mathieson Alkali Works, Inc. U. S. Patent No. 2,430,675.

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2 Moisture Tellers are available in several models which accommodate sample pans having diameters of 2¾", 5¼" and 8" with depths of 1", 2", 4" and 12", for samples of from 1 to 500 grams.
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No. 2,450,439, Method of cleaning dried zirconia gel production equipment, patented October 5, 1948 by Thomas H. Milliken, Jr., Rose Valley, Pa., assignor to Houdry Process Corporation, Wilmington, Del., a corporation of Delaware. The method of cleaning equipment which has been employed in contact with a zirconia gel during the drying of said gel comprises washing said equipment with a caustic alkali solution containing at least one gram of dissolved silica therein per 100 cc. of solution at a temperature below 70°C.

No. 2,450,861, Composition for descaling ferrous metal, patented October 5, 1948 by Harold A. Robinson, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware. A composition for descaling a ferrous metal surface is covered comprising by weight five to 25 per cent of hydrogen chloride, 0.1 to one per cent of an organic nitrogen base selected from the group consisting of pyridine, quinoline, methyl quinoline, and otoluidine, and 2.2 to 3.3 per cent of a water-soluble salt selected from the group consisting of the water-soluble divalent chromium salts and the water-soluble trivalent titanium salts, the balance being water.

No. 2,451,085, Insecticidal haloido-alkylene esters of caprylphenoxy-acetic acid, patented October 12, 1948 by William F. Hester, Drexel Hill, and W. E. Craig, Philadelphia, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware.

Compounds of the formula

Capryl-Ph-$OCH_2COOC_nH_n$

$(OC_nH_n)_mX$

wherein Ph is a phenyl nucleus, X is a haloid from the group consisting of chlorine, bromine, iodine, thiocyano- and cyano-groups, m is a number from zero to two, inclusive, and C_nH_n is an alyklene chain of at least two carbon atoms in which n has a value of two to three, inclusive.

No. 2,451,645, Fungicidal and bactericidal compositions containing 1-(4'-isopropylbenzyl)-Piperazine, patented October 19, 1948 by Ferdinand B. Zienty and George W. Steahly, St. Louis, Mo., assignors to Monsanto Chemical Company, St. Louis, Mo., a corporation of Delaware. A fungicidal and bactericidal composition is covvered comprising a substance selected from the group consisting of 1-(4'-isopropyybenzyl)-piperazine and its acid salts, and a carrier.

No. 2,452,429, Fungicidal compositions, patented October 26, 1948 by Paul J. Carlisle, Wilmington, Del., and Wilbie S. Hinegardner, Niagara Falls, N. Y., assignors to E. I. du Pont de Nemours & Company, Wilmington, Del., a corporation of Delaware. A fungicidal composition is patented comprising a mixture of paraformaldehyde and a chlorine derivative of trimethyl acetonitrile having the formula $C.H(_{-x})Clx\text{-}CN$, where x = 1 to 3.

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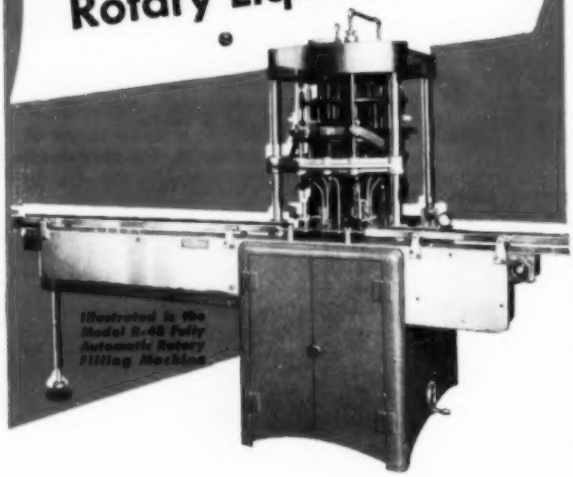

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An appreciable deficit in fats and oils, despite substantial production increases during the past year, was seen in a recent report of the Food and Agricultural Organization, meeting in Washington, D. C., last month.

Continued softness characterized the price picture in the essential oil market during the past month, with a few more price declines recorded in recent days. Ceylon citronella oil fell five cents recently, while cajeput, technical, was 15 cents off its previous range.

Addresses Premium Club

WHERE premium merchandise is advertised as obtainable for a given number of coupons during a stated period of time, the supplier must be able to continue to supply the item without change in price or quality for the life of the offer, according to David B. Pickering, premium buyer, Colgate-Palmolive-Peet Co., Jersey City, in a talk before a recent meeting of the New York Premium Club. During his talk, Mr. Pickering pointed out several other essentials in premium merchandizing.

Basically, no profit for the user is made on the sale or handling of the premium, Mr. Pickering said. He then pointed out a few of the things suppliers must consider in this type of selling. First, while the buyer, from his past records and experience, should and usually can estimate with a fair degree of accuracy the quantity needed, this is at best an estimate and the seller must be prepared to fill demands for the item even though they greatly exceed the original estimate. He should be prepared to deliver only the quantity needed, should the estimate prove to have been over-optimistic.

Secondly, prompt deliveries are absolutely essential. Delays are seldom caused by a hold-up in the handling of the orders when received, but rather are a result of an inadequate supply of merchandise on hand to mail out.

Third, the supplier must be exceptionally careful in the inspection of premium merchandise. A great deal of harm can be caused by the consumer receiving an inferior quality of merchandise, therefore a spot check should be made to determine whether any of the shipments are of substandard quality.

It should be remembered that the greater the number of people the premium attracts, the greater its success will be. The offer of a mail-in requiring the outlay of $1.00 or more automatically eliminates a considerable segment of potential customers. Cash requirements for mail-in offers have been steadily on the increase. Before the war, 10-cents-and-box-top was the accepted offer. Slowly the cash requirement rose to 25 cents, then to 50 cents, and now $1.00 offers are not uncommon. This is an unhealthy condition, Mr. Pickering observed.

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Intermolecular Forces

In a series of homologous long-chain compounds such as soaps, the cross sections of the hydrocarbon chains vary with the chain length, so that the side spacings and the shorter edges of the unit cells are not constant. With sodium and silver soaps, the strong ionic forces compress the molecules, and the potential-energy curve for such a pair would have a minimum at a far lower energy and at a smaller distance than for hydrocarbon molecules. Potential-energy curves for such pairs of chains show that although the van der Waals are smaller than the ionic forces, their effect on the equilibrium distance is enough to cause a dilation of the lattice as the chain length increases. Calculated values for the cross section for silver and gamma-sodium soaps show the predicted increase.

Potassium soaps of up to 12 carbon atoms consist of alternating rows of molecules whose axes are inclined to one another. For these soaps, the cross section does not increase with increasing chain length. For potassium soaps of 12 or more carbon atoms, the same effect is found as for the sodium and silver soaps. V. Vand and J. H. de Boer, Koninkl. Nederland. Akad. Wentenschap., Proc., 30, 991-1002; through *Chem. Abs.*

Factors Affecting Sanitizers

After 15, 30, 60, and 120 seconds, one-ml. samples were taken from a mixture of one ml. of a culture of *Eberthella typhosa* and 10 ml. of one of a series of disinfectant solutions. They were diluted one to nine with three per cent "Tween" plus 0.2 per cent of asolectin neutralizing solution, to disperse clumps, and a portion was plated. The original tubes were tested for unkilled organisms adhering to the walls.

Wide variations in effectiveness occurred among the commercial preparations tested. When organic matter was present, somewhat more than twice as much of the better preparations was required, and up to 34 times as much of the poor ones. The effectiveness of the quaternary ammonium compounds declined more rapidly as organic matter was added, than that of the chlorine compounds. The quaternaries gain in effectiveness with rise in temperature and are markedly more effective at pH 9. The effectiveness in distilled water compared to that in softened tap water and to that in water of 275 p.p.m. hardness was, respectively: 1/34, 1/75, and 1/95. Common pathogens were as sensitive as *E. coli* except *Pseudomonas aeruginosa* and *Serratia marcesens*. If the differences from other more familiar antiseptics are known and allowed for, the quaternary ammonium compounds can be used for sanitizing table glassware and dishes. G. M. Ridenour and E. H. Armbruster, *Am. J. Pub. Health* 38, 504-11 (1948).

Effect of Milk Residues

A study was made to determine the extent to which failure to remove milk residues from dairy utensils might hinder their sanitizaton by chemicals. "Roccal," a quaternary ammonium compound, at 200 p.p.m., and "Dalglish Liquid Bleach" containing 10-12 per cent of available chlorine, at 50 p.p.m. were tested. Against *Escherichia coli*, the bleach was as effective at 25 p.p.m. as "Roccal" at 200. Both remained effective at nearly 0.1 per cent of added skim milk, and often were increased in effectiveness at and below about 0.1 per cent of added skim milk. Use of tap water instead of distilled water to prepare test solutions interfered with the effectiveness of "Roccal," but did not affect that of the bleach. A direct-plating technique gave better results than the glass-slide technique and is recommended. C. K. Johns, *Can. J. Research* 26F, 91104 (1148).

Alkyl Aryl Sulfonates

The method for producing alkyl aryl sulfonates has been improved by removal of unreacted benzene and other low-boiling impurities by heating to a temperature above the boiling point of benzene but below the boiling point of the alkyl benzenes. The resulting product has a longer storage life without development of unpleasant odors. L. H. Flett, to Allied Chemical & Dye Corp. U. S. Patent No. 2, 441, 351.

Detergents Use Rises

A survey of soaps and synthetic detergents as used in hard-water areas was reported by the Omaha World-Herald. Three years ago only 25 per cent bought synthetic detergents, but in 1948 the number had grown to 86 per cent. Preferences were given by brand names, so that soap products were mixed in with synthetics in the different uses. For example, preferences were expressed as follows:

For Household Laundry

Brand	% *Preferring*
Tide	18
Duz	17
Oxydol	17
Blue Barrel bar	14
Rinso	13
Super Suds	4
Fels Naphtha bar	4
P & G bar	4
White King	3
Ivory bar	2

For Dishes

Brand	% *Preferring*
Vel	24
Tide	22
Dreft	22
Duz	5
Ivory bar	5
Oxydol	4
Ivory Flakes	4
Rinso	3
Swerl	3
Lux Flakes	2
Ivory Snow	1
Super Suds	1

For fine Fabrics

Brand	% *Preferring*
Lux Flakes	26
Dreft	22
Vel	16
Ivory Flakes	16
Tide	8
Ivory Snow	6
Ivory bar	4

Synthetics top the list for the first two uses, soap for washing fine fabrics. The usual toilet soaps were used for the bath and as hand soaps. Mechanics's hand soaps were used by 42 per cent of those questioned. Among the liquid shampoos, those based on synthetics led the list, while soap shampoos competed but less favorably.

Liquid Shampoos

Brand	% *Preference*
Halo	35
Drene	25
Fitch	16
Watkins	6
Woodbury	3
Kreml	3
Avon	2
Palmolive	1

SANITARY PRODUCTS
A SECTION OF SOAP

HOW can the average manufacturer keep up with government specifications? What with the Treasury, Army, Navy, Air Corps, Veterans' Administration, and various and sundry other government departments each having its own specifications for the numerous products which it buys, and regularly and frequently making changes or issuing new ones, the task merely of keeping up to date has become truly a problem for those who bid on government needs. This is the comment to us recently by a leading mid-west manufacturer of soaps, cleansers, and allied chemical specialties, who registers a strong complaint against this affection by government departments for too many specifications.

Often, we have heard questioned the necessity for the multiplicity of government specifications for chemical sanitation materials, each department with its own and often with but slight variation from those of other departments. In the case of cleansers, soap products, disinfectants, insecticides, and allied items with uses common to all departments, we too have wondered why general specifications applicable to all government departments would not be both feasible and sensible.

Why cannot the Bureau of Standards or some other government agency set up over-all specifications as at least one step toward the elimination of useless and costly duplication, toward greater economy in government purchasing, and toward simplification of suppliers' problems? The idea that each and every department must have its own specification for each and every soap and chemical product which it uses is in our opinion pure poppycock. Hundreds of products with common uses could have common specifications required for all departments. And what better clearing house and mentor for such than the Bureau of Standards?

SO widespread has been change and progress in the formulation of household insecticides since the end of the war that confusion among consumers as well as manufacturers is no surprise. That confusion still exists. Consumers wonder what to use; manufacturers wonder what to make and market. Currently, the subject is being taken apart piece-by-piece and discussed at the 35th annual meeting of the National Association of Insecticide & Disinfectant Manufacturers in New York. Whether this open discussion will help to clear the air in the mind of the average manufacturer will be seen.

Irrespective of the conclusions, if any, which may come out of this meeting, the fact remains in our opinion that one crying need exists today in household insecticides,—and that need is for simplification. This we feel is the only answer to the confusion which exists. Our observations of recent years show that people will not make a careful study of proper insecticide uses, will not be bothered to use the right product if the wrong product is handy, will not keep three or four different types of insecticide around the house.

VARIATIONS in reports on the general status of the janitor supply and sanitary supply business of late reveal some rather significant facts. Apparently, some houses are still doing a good job in keeping up their sales volume, and upon investigation it is found that such firms are usually those with reputations for being more alert and aggressive. In each case, they admit that selling is less easy, that they have to sell a lot harder for what they get. But, they *do* sell harder and the business seems to be there. Frankly, we feel that those who are still coasting along, a wartime habit we all acquired, had better step on the gas.

PINE OIL

By Milton A. Lesser

PINE oil has become an important raw material in the manufacture of soaps and sanitary products. It is, however, a far more versatile substance than is generally realized. This is well indicated in the growing number of industries in which it has become a basic requisite or a valued processing adjunct.

It is used extensively by the textile industry, in paper production, as a flotation agent in mining, in the manufacture of inks, paints and varnishes, in the formulation of cutting oils, degreasing compounds and adhesives, and in a minor way in leather tanning. In the sanitation and maintenance fields, pine oil finds wide use in the production of effective disinfectants, a variety of soaps, laundry aids, general cleaners and deodorants. It is a valued component of various types of polishes and sweeping compounds. Pine oil has also been used in the preparation of more effective insecticides and cattle sprays and dips.

The value of pine oil for industry in general and soap and sanitary products in particular stems from an interesting combination of useful properties and desirable characteristics. Pine oil is recognized as a very effective promoter of surface activity. It "wets out" rapidly, and penetrates quickly and completely. Thus, it has been pointed out,(1) it is an aid to other processing chemicals with which it is compounded, making them function more readily, more uniformly, and more rapidly. An efficient and powerful solvent for many resins, oils, greases and waxes, pine oil is also an effective dispersing agent for finely divided, insoluble solids.

Pine oil is only slightly soluble in water, but it is readily emulsified or made miscible with this fluid. Solubilized pine oil aids in the emulsification and dispersion of other substances. With a clean, wholesome, piney, pleasant odor, the oil finds frequent use in the preparation of deodorants and as a perfuming agent. With a high rating as an antibacterial agent, pine oil is not only of importance in making disinfectants, but is also finding employment as a preservative. Notable, too, is the fact that pine oil is relatively nontoxic to humans and animals, making it safe to handle and use.

While synthetic pine oil can and has been made (2), the pine oil of commerce today is almost entirely of natural origin. As pointed out by Rapp,(3) there are three general methods of removing pine oil from pine wood; namely, by steam distillation, destructive distillation, and extraction. Steam-distilled pine oil is the type most commonly used in the production of soap and sanitary products.

Practically all the currently available steam-distilled pine oil comes from the stump wood and fallen timber of the longleaf and other Southern pines. By a solvent-extraction process, pine oil, turpentine and rosin are taken together from pine wood. The pine oil is then separated from the turpentine and rosin by fractional distillation.

Pine oil is a pale yellow liquid with a characteristic pleasing piney odor. It consists of mixtures of tertiary and secondary terpene alcohols together with ethers and hydrocarbons plus minor amounts of ketones. It is hardly necessary, however, to go into a detailed discussion of the physical properties and chemical composition of pine oil. Like other important chemicals, there are now established standards for this material. Government standards are given in Federal Specification LLL-O-358, which became official on July 13, 1945. Standards also are set up in the latest (eighth) edition of the "National Formulary." The Pine Oil N.F. described in this official pharmaceutical text is used to make Pine Oil Emulsion Concentrate N.F. When diluted in the ratio of 5 parts to 95 parts of water, this concentrate yields a general purpose pine oil disinfectant.(5)

There is little question that one of the major uses for pine oil in the sanitation industry is in the manufacture of pine oil disinfectants. Essentially these consist of pine oil and an emulsifier. These products have found wide use since their introduction by Stevenson (6) in 1915. As recently remarked by Varley,(7) there is little doubt that this type of disinfectant is utilized as much for its deodorant effects as for its disinfectant properties.

The antibacterial efficiency of pine oil disinfectants has been demonstrated by a number of investigators, most of them using the Hygienic Laboratory formula as the test preparation.(8) Such studies have shown that, in the proper dilution, pine oil disinfectant is effective against organisms representing the important groups of pathogens which cause contagious diseases. The product is not germicidal, however, against pyogenic organisms like *Staphylococcus aureus*. (9) As pointed out by Reddish,(10) this fact, while interesting, does not detract at all from the actual value of pine oil emulsions as disinfectants because S. *aureus* is not a communicable disease organism. Hence no useful purpose would be served if this germ were destroyed on inanimate objects.

This well-known student of

anti-bacterial agents has stated that pine oil emulsions in proper dilutions will kill all kinds of bacteria causing communicable diseases. When applied to inanimate objects in a dilution 20 times the phenol coefficient, these products are sufficiently germicidal for general disinfectant purposes. It is his opinion that these preparations should not be used as antiseptics on the skin or mucous membranes because they are not effective against the suppurative organisms. For like reasons, they should not be used as disinfectants for surgical instruments.

A great advantage of pine oil disinfectants—one that is in marked contrast to some of the more recently introduced antibacterial compounds—is their ability to retain their efficiency in the presence of organic matter. This was demonstrated in studies made by Klarmann and Wright (11) in which a pine oil disinfectant was tested against *Eberthella typhosa*. The compound retained 90 per cent of its activity in the presence of serum and 100 per cent in the presence of blood.

Varley (7) has noted that, depending on the amount and grade of steam-distilled pine oil and the type of emulsifier used, the phenol coefficient values of pine oil disinfectants range from 3 up to 7. The most popular grades have a phenol coefficient value of 3, 4 or 5. Lately, however, products with the higher phenol coefficients have begun to appear on the market.

Certain characteristics are expected in a well made pine oil disinfectant. According to Schwarcz, (12) such a product (a) has a clear sparkling amber color and remains homogeneous at any temperature from 0 to 100°F., (b) produces a snowy-white emulsion in water, (c) does not burn body tissues, (d) is noncorrosive and nontoxic to humans, (e) does not stain when diluted, (f) leaves a clean piney odor wherever applied, (g) kills typhoid, scarlet fever, diphtheria, cholera and other organisms, and (h) is free of suspended matter.

Standards for pine oil disinfectants have been developed by various groups. As noted by Schwarcz, the U. S. Department of Agriculture (Bulletin No. 989) requires that such a product contain not less than 60 per cent of pine oil. It also suggests that all manufacturers comply with Commercial Standard CS-69-38, which calls for a minimum of 60 per cent of pine oil and a maximum of 10 per cent of water in the finished product. A somewhat higher pine oil ratio is required in the pharmaceutical Pine Oil Emulsion Concentrate N.F. This must contain not less than 65 per cent by volume of pine oil and not more than 10 per cent of water.

THE production of a pine oil disinfectant consists primarily in the selection and combination of the proper grade of pine oil and a suitable emulsifying agent. Considerable leeway is allowed in the selection of emulsifiers. Even the official pharmaceutical procedures, which are usually very specific, permit the use of soap, sulfonated oil or other suitable agent. Pine oil disinfectants may be made by the so-called cold-mix process or the hot-boil process. The latter is generally employed by larger scale producers and is said (7) to insure better control over the finished product, including its water content and phenol coefficient.

The oldest preparation of this type was the formula developed (6) at the Hygienic Laboratory. This emulsion had a phenol coefficient of 3.5 to 4.0 and could be used at any dilution up to 1:500. Such a disinfectant is made from:

Pine oil	100 parts
"I" Wood rosin (acid number-165)	40 "
Sodium hydroxide (25% solution)	20 "

The pine oil and rosin are heated to 80°C. in a jacketed steam kettle, heating being continued until complete solution is obtained. The temperature is allowed to fall to 60°C. and the caustic soda solution is added very slowly with stirring. Stirring is continued until saponification is complete.

A modification (13) of this formula calls for the use of:

Pine oil	61.9 per cent
"I" Wood rosin	24.7 " "
Oleic acid	2.0 per cent
Sodium hydroxide	3.1 " "
Water	8.3 " "

Some manufacturers have found it advantageous to use a vegetable oil soap (in syrup or paste form) instead of a rosin soap. This yields a lighter colored product which is more soluble in water. For example, a 30 per cent coconut oil potash soap may be used in the following (12) pine oil disinfectant:

Pine oil	60 per cent
Vegetable oil soap	40 " "

Another variation, which should have a phenol coefficient of about 5.5, is listed by Bennett (14) as follows:

Pine oil	80 parts
Linseed soap (15% anhydrous)	20 "

When tested by the F.D.A. procedure against *E. typhi*, the following (15) pine oil disinfectant showed a phenol coefficient range between 5.0 and 5.5:

Pine oil (Yarmor 302*)	70 per cent
Sodium oleate	20 " "
Water	10 " "

Labels for such pine oil disinfectants must conform with existing statutes with respect to efficiency, mode of use and the like. Directions for using these soap-emulsified products are essentially the same with compounds of similar phenol coefficients. For example, in the bathroom a 1:40 dilution in water is used to wash the bathtub, basin and toilet. The same concentration may be sprayed freely in public places like schools, hotels, theaters, stores, office buildings and such. A 1:25 dilution, sprayed into garbage receptacles, aids to check putrefaction and prevent the breeding of flies.

On the farm, where pine oil disinfectant is finding wider use, a 1:40 dilution of pine oil disinfectant in water is employed as a wash and spray in and about the stables to promote sanitation and destroy odors. A stronger solution is sprayed on roosts, drop boards and other places where the chicken parasites may hide. To kill fleas on dogs, the animals are washed with a like solution in soapy water; allowing the liquid to remain

*Reg. U. S. Pat. Off. by Hercules Powder Co.

on the animal for at least three minutes.

Higher phenol coefficients, which permit use of higher dilutions for comparable effects, are obtained when sulfonated oils are used as the emulsifiers. For instance, a product (15) which yields a phenol coefficient of 6 to 7 is made from:

Pine oil (Yarmor 302®) ..	80 per cent
Sulfonated castor oil (65%)	20 " "

A combination of emulsifiers is employed to make the following pine oil disinfectant: (14,16)

Pine oil	60 per cent
Sulfonated castor oil (50%)	30 " "
Red Oil or Oleic acid	9 " "
Potassium hydroxide	1 " "

Mix the pine oil, the sulfonated castor oil and the oleic acid, and dissolve the hydroxide in the mixture. Separation does not occur when this product is diluted with water.

AS already indicated, pine oil emulsions have low phenol coefficients against certain types of bacteria. Hence attempts have been made to overcome this deficiency by the addition of other substances. Borglin (8) mentions that the addition of thymol or carvacrol to pine oil increases the phenol coefficient. Several years ago, Klarmann (17) was granted a patent covering germicidal compositions consisting of aqueous dispersions of alpha terpineol or pine oil with halogenated phenols, such as chlorophenol, chlorocresol or chloroxylenol. Working as synergistic combinations, these preparations are effective against hemolytic streptococci which are not affected by the pine oil emulsions alone. (18) More recently, Partansky (19) suggested the use of germicidal combinations containing ortho-phenyl phenol and pine oil. These also give improved phenol coefficients. Such compositions should be labeled pine type disinfectants, not pine oil disinfectants.

In some pine oil preparations employed primarily for their deodorant action, there may be some sacrifice, often quite considerable, of antibacterial action. These deodorants are used where an inexpensive, pleasant smelling product is desired. In some cases the pine oil content is as low as 20 per cent. Of course such items can hardly be classed as high grade deodorants. To make such products, a soap or other emulsifier is added to the pine oil in a quantity sufficient to yield a milky white finished product. In discussing these deodorants, Schwarcz (12) expresses the opinion that it would be better economy to purchase a disinfectant of a known pine oil content. A smaller quantity of such a preparation would then suffice to give the desired deodorizing effect.

The pleasant odor imparted by pine oil is one of the factors responsible for its wide use in scrub soaps. In addition to its efficient deodorizing action, pine oil gives scrub soaps an improved solvent action and heightened efficiency against grease and stains. (20,21) With a pine oil content ranging from 3 to as high as 20 per cent, these scrub soaps are provided as liquids or as powders. Soaps of this sort are said (22) to be especially adapted for use on fine tile, cork, rubber, linoleum, mastic, terrazzo and painted floors.

Information obtained from a leading producer of pine oil (23) provides methods for making such soaps. For example, a liquid scrub soap may be produced along the following lines:

Oleic acid (Acid No. 195) ..	9.28 parts
1 Wood rosin (Acid No. 165)	9.40 "
Sodium hydroxide (100%) .	2.41 "
Pine Oil	20.00 "
Trisodium phosphate	4.00 "
Water	54.91 "

The oleic acid and the rosin are placed in a tank equipped with a stirrer and heated to 60°C. Separately dissolve the caustic soda and the phosphate in the water and slowly stir into the oleic-rosin blend. Continue stirring. After saponification is complete, add the pine oil and stir until a clear liquid is obtained.

Where saponifying equipment is not available, a liquid scrubbing soap may be made from:

Flake soap	20 per cent
Pine oil	20 " "
Trisodium phosphate	5 " "
Water	55 " "

Scrub soaps in powder form appear to be increasing in popularity. A product of this kind can be made from:

Oleic acid (Acid No. 195) ..	4.64 parts
1 Wood rosin (Acid No. 165)	4.70 "
Sodium hydroxide (100%) .	1.20 "
Pine Oil	10.00 "
Water	4.46 "
Soda ash (58%)	75.00 "

The oleic acid, rosin and pine oil are mixed and heated to 60°C. Separately dissolve the caustic soda in the previously prepared mixture; continue stirring. After saponification is complete, add the soap to the soda ash in a regulation powder mill. Continue milling until a free flowing product is formed.

By the more direct method the following combination provides a powder scrub soap that is especially useful for cleaning greasy garage and filling station floors:

Flake soap	10 per cent
Pine oil	10 " "
Water	5 " "
Soda ash	75 " "

If a paste or jelly type product is desired, the following formula from one of Bennett's (14) texts should serve:

Corn oil soap	50 parts
Pine oil	10 "
Diglycol laurate	5 "
Alcohol	3-5 "

The beneficial effects of pine oil may also be utilized in the preparation of liquid hand soaps. (24) In addition to imparting a pleasant odor, pine oil's solvent action is of definite value for removing heavier dirt and grease from the hands. (12) A typical liquid soap of this kind, suitable for use in washroom dispensers, is as follows: (22)

Coconut oil	160 parts
Potassium hydroxide (89%)	46 "
Pine oil	40 "
Water	754 "

Very similar is the following formula (23) for the more direct production of a liquid hand soap for use in washroom dispensers:

Coconut potash soap	20.5 per cent
Pine oil	4.1 " "
Water	75.4 " "

Interesting and indicative is the newer use of pine oil in powdered types of industrial hand cleaners. Cotton and Frankenfeld (25) have reported that certain types of commercial powdered soap, containing 50 to 60 per cent of corn meal and 40 per cent of soap, may become infested with insects, particularly flour

Because of its versatility, pine oil is used widely in soaps and related sanitary chemicals. It finds use as a solvent, dispersant and deodorant.

beetles. They found that the addition of 4 per cent of pine oil to this soap prevented insect infestation.

IT is obvious that the properties inherent in pine oil should be of value in general purpose cleaners. Thus, a preparation like the following (26) may be employed for cleaning paint and metal surfaces and for household applications such as the scouring of woodwork, linoleum and rugs:

Pine oil	91.0	parts
Oleic acid	6.0	"
Triethanolamine	3.2	"
Water	100.0	"

Add the oleic acid, triethanolamine and one-third of the pine oil to a mixer and stir until clear. Then, very slowly, incorporate an equal volume of water with vigorous stirring. When a smooth uniform emulsion is formed, gradually add the rest of the oil, with constant agitation. Similarly incorporate the rest of the water. The emulsion so formed is a creamy, white stable product. It can be diluted as desired; best results being obtained when the water is stirred into the product.

Other emulsions containing high proportions of pine oil are finding wider use not only as efficient general purpose cleaners, but also as valuable laundry aids. This last is not surprising in view of the extensive use of pine oil by the textile industry. Those interested in preparing an item of this type will find the following formula to be a useful basis from which to start experiments.

Pine oil	80	per cent
Emulsifier (e.g. low titer soap)	10-15	" "
Water	5-10	" "

Pine oil cleaning compounds may be employed for general household cleaning purposes such as washing dishes, cleaning windows and metal, porcelain and composition surfaces. For such applications it is used in a ratio of four tablespoonsful to a bucket of soapy water. It eliminates the need for other auxiliary cleansing compounds.

Such pine oil emulsions are also of definite value in both the home washing machine and in the wash wheel of the commercial laundry. In laundry operations, washing formulas containing such solubilized pine oil are being widely used because the oil accelerates the penetrating and wetting action of the soap and alkali and because it helps to remove the last trace of dirt and embedded grime from all types of fabrics. (1,3) The same effects are called into play when the pine oil emulsions are used as adjuncts in modern rug and carpet cleaning procedures.

BECAUSE it contributes considerably to the cleansing action, acts as a good solvent and spreader for wax and other materials, improves the odor and makes for smoother application, pine oil is often used in the manufacture of polishes for metals, automobiles, furniture and floors.

Pine oil may be employed in making general purpose metal polishes as well as more specialized products of this type. For example, a pine oil metal polish that is non-inflammable, spreads freely, retards tarnish formation and produces a lasting luster with a minimum of effort is as follows: (23)

Tripoli powder	20	per cent
Flake soap	7	" "
Sodium hydroxide (100%)	1	" "
Pine oil	25	" "
Water	47	" "

As indicated by this formula, pine oil is a common and valuable solvent in soap-base metal polishes, in which it also acts to give body and hold the abrasive agents in suspension. Such utility is further illustrated in the following well-recommended (27, 28) formula for a paste polish for metals:

Chip soap	10	parts
Silica dust	20	"
Air-floated tripoli	20	"
Pine oil	2	"
Water	48	"

Pine oil finds rather frequent employment in chromium polishes. A very simple, yet highly effective polish of this kind has been listed by John, (29) as follows:

Trichlorethylene	6 gal.
Pine oil	1 pt.

A number of formulas could be cited to illustrate the use of pine oil in automobile polishes and furniture polishes. An example of the latter, as given by Belanger, (30) calls for:

Light mineral oil	1 gal.
Gasoline	1½ pt.
Pine oil	½ pt.
Cedar leaf oil	4 oz.
Oil-soluble color	sufficient

It is noted that the gasoline in this polish adds considerably to its cleaning action. However, it may be omitted if a low flash point product is objectionable.

Pine oil is also an advantageous component of many floor polishes. By way of example, there may be cited the following formula (29) for an inexpensive colored floor polish:

Canelilla wax	20 lb.
Oil-soluble dyestuff	¾ lb.
Ceresine wax or microcrystalline wax	120 lb.
White spirit	36 gal.
Turpentine	6 gal.
Pine oil	1 qt.

The formulation of other floor care products, like floor oils and sweeping compounds, may also employ pine oil. (31) For instance, an easily prepared floor oil (29) may consist of:

Light mineral oil (Sp. Gr. 0.850)	7 gal.
White spirit	3 gal.
Pine oil	½ gal.

Also indicative of pine oil's usefulness is the following formula (30) for making a well-balanced sweeping compound:

Fine sawdust	100 lb.
Sea or lake sand	18 lb.
Salt	20 lb.
Paradichlorobenzene	3 lb.

(*Turn to Page* 155)

. . . WHY WORRY ABOUT WINTER WEATHER?

Will you cross your fingers during the next few months every time you make a shipment of wax polish via open truck, unheated freight car or ocean steamer?

Have you lost money in past winters when your wax froze solid—and then turned into jelly when it thawed out?

If you have, we offer an effective remedy:

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Carefully controlled laboratory tests have shown that self-polishing waxes made with Emulsowax on the basis of recommended formulas have been unaffected by as many as **five** or **six freezings and thawings!** There were no signs of gelation . . . no increased viscosity . . . . no separation . . . . no impairment of gloss in the film . . . . when the emulsions were thawed out after twelve to sixteen hours in the freezing chamber.

This ability to withstand the effects of repeated freezings is only one of the extra values you buy when you buy Emulsowax. There are plenty of others, important in all weathers. **Gloss,** for instance . . . . much higher gloss than you can get using pure Carnauba Wax. **Slip resistance** . . . . polishes made with Emulsowax are *safe*. **Freedom from tack. No water-spotting. Long wear.** And of course, **price!**

Would you like to get away from Carnauba Wax altogether without sacrificing quality? Try Emulsowaxes 1530 or 1630. Would you like to keep some Carnauba Wax content but cut your costs and at the same time maintain the high quality of your product? Extending your Carnauba Wax with Emulsowaxes 1508 or 1214 is the answer.

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N.A.I.D.M. Meets In New York

...to Investigate Marketing Problems and Prospects for Insecticides and Disinfectants. Wax Forum Scheduled.

AN intensive investigation of problems of the industry was the highlight of the 35th annual meeting of the National Association of Insecticide & Disinfectant Manufacturers, being held Dec. 6 and 7 at the Hotel New Yorker, New York. Individual and forum type discussions with an expected large participation from the floor on the background and what lies ahead for insecticides and disinfectants were to be highlights of the program. Three outstanding problems with which the wax industry is faced: anti-slip, floor wax testing equipment and the Federal Trade Commission trade rules were also scheduled for thorough discussion at this 35th annual N.A.I.D.M. meeting.

Besides discussions of problems of direct interest to industries covered by the association, there are to be talks of broad general interest to all business such as the cement basing point decision and the government's industrial mobilization program.

Committee meetings, as well as a meeting and dinner of the board of governors of the N.A.I.D.M. took place Sunday, Dec. 5, the night before the official opening of the meeting. Reports of the various committees are to be given briefly on the afternoon of the final day of the meeting.

As the December meeting of the association is its annual meeting, officers and directors for the coming year are to be chosen.

This year's convention has as program chairman T. Carter Parkinson of McCormick & Co., Baltimore. Other members of his committee include: James E. Ferris of Niagara Alkali Co., New York; Melvin Goldberg of Pesticide Advisory Service, New York; John A. Marcuse, West Disinfecting Co., Long Island City, N. Y., and John Powell, John Powell & Co., New York. Ira P. MacNair, MacNair-Dorland Co., is in charge of arrangements and John H. Calo, John H. Calo Co. and L. J. LaCava, Continental Can Co., both of New York, are handling the entertainment.

GORDON BAIRD, President

H. W. HAMILTON, Secretary

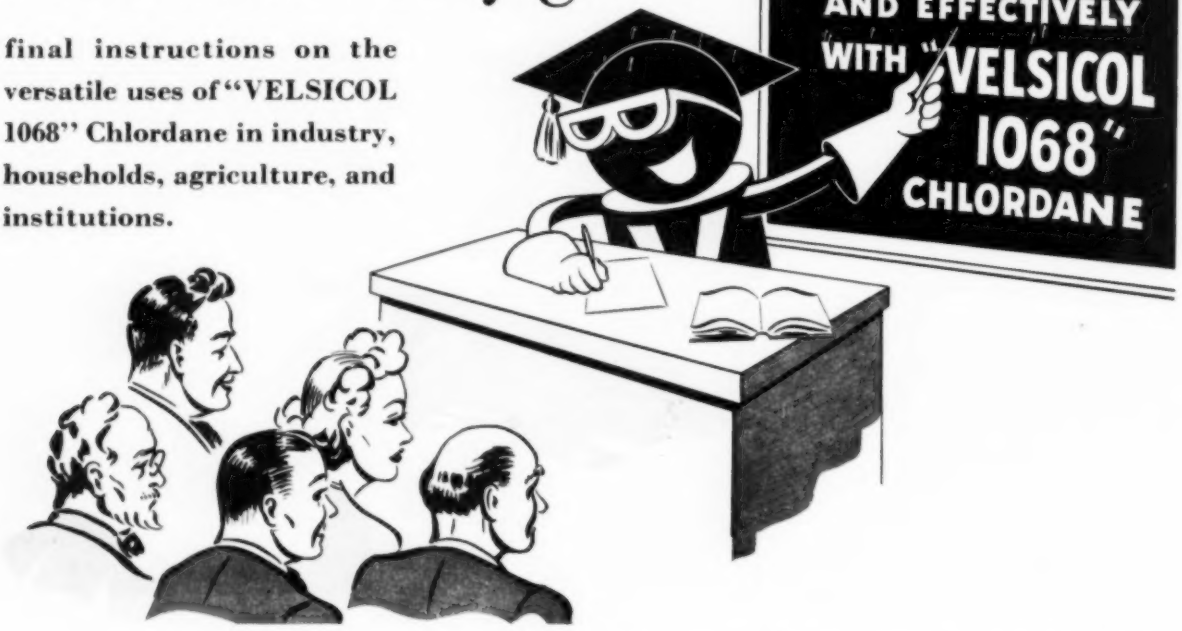
Gordon M. Baird, Baird & McGuire, Inc., Holbrook, Mass., president of the association, presided at the Monday morning session, at which he delivered his annual report to the N.A.I.D.M. membership. Registration preceded the first session, which was held in the North Ballroom, starting at 10:00 a. m. Mr. Baird (see next page) welcomed those attending the meeting and expressed his thanks for the support and cooperation of the officers, directors and members of the association during the year.

He was followed by H. W. Hamilton of H. W. Hamilton Co., New York, secretary, who read his report, which accompanies this advance meeting story. The next business on the program included the appointment of committees and the election of a nominating committee. This was followed by a paper, "The Expanding Rationale of Chemical Disinfectants" by Dr. E. G. Klarmann, Lehn & Fink, Inc., Bloomfield, N. J. The role industry can play in speeding up defense preparations now being undertaken by the government was developed in a talk by Lt. Col. C. A. Shaunesey, Department of the Army, New York Quartermaster Purchasing Office. His topic was "The Quartermaster Industrial Mobilization Program."

A group luncheon in the grand ballroom followed the morning session on Monday. The afternoon session, to be presided over by L. J. Oppenheimer, West Disinfecting Co., Long Island City, N. Y., and vice-president of the N.A.I.D.M., was to cover quaternaries, low pressure aerosols and waxes. The first talk, "Applications of Quaternaries in the Laundry Field," was to be presented by Dr. P. G. Bartlett of West Disinfecting Co. Following Dr. Bartlett, R. H. Nelson of the U. S. Department of Agriculture, Bureau of Entomology and Plant Quarantine at Beltsville, Md., was to read a paper: "Efficiency of Low Pressure Aerosols in Relation to Formulation and Particle Size," based on work done by Mr. Nelson and the following associates at the U.S.D.A.: R. A. Fulton, J. H. Fales and A. H. Yoemans. Continuing its consideration of aerosols, a forum on the subject from several

Professor Velsy gives

final instructions on the versatile uses of "VELSICOL 1068" Chlordane in industry, households, agriculture, and institutions.



INDUSTRY. Restaurants, Hospitals, Hotels, Large Institutions of all kinds, gain increased insect control by using formulations containing "VELSICOL 1068" Chlordane.

HOUSEHOLDS. "VELSICOL 1068" Chlordane makes for good riddance of these bad household visitors: Roaches, Ants, Moths, Bedbugs, Flies, Ticks, Carpet Beetles.

INSTITUTIONS. Roaches, Bedbugs, Ants, Flies, Spiders, and Moths find large institutions less attractive after "VELSICOL 1068" has been used. Recommend it to users for best results.

Here a group of people representing Industry, Households, Institutions, and Agriculture, is attending a refresher course conducted by Professor Velsy—IN PERSON! And the old master is giving out with some practical instructions on the best and surest way to cope with the ever-vexing problem of Fly control. Nothing recondite, you understand, just straight-from-the-shoulder, down to earth advice in this important matter—(quote): "Folks, there's just something about "VELSICOL 1068" that takes care of Flies in a hurry! That's because "VELSICOL 1068" is a non-repellant, "residual vapor" and contact insect toxicant. So take a tip. Just tell your customers you got it straight from the Professor himself — that for consistent, effective control of insects, there is nothing better than "VELSICOL 1068."

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HODGES-TRUESDALE CO., Cambridge, Mass.

different points of view was to be the next subject. Melvin Goldberg of Pesticide Advisory Service was to act as moderator. Low pressure aerosols are being covered from the standpoint of customer acceptance, mechanical performance, effectiveness and uses in fields other than insecticides. Experts from their respective fields are being called on for participation in this discussion.

A report of the Aerosol Committee by H. E. Peterson of Continental Filling Corp., Chicago, chairman, was to follow. The final feature of the afternoon was to be a symposium on waxes and present day anti-slip problems, with Ira P. MacNair, MacNair-Dorland Co., as moderator.

The Tuesday morning session, presided over by C. L. Weirich of C. B. Dolge Co., Westport, Conn., will hear the report of the nominating committee, which precedes the discussion "A Machine for Evaluation of Dirt Retention of Floor Wax" by C. S. Kimball of Foster D. Snell, Inc., New York. Mr. Kimball's discussion centers on types of equipment developed for testing purposes, which are to be demonstrated.

"Expanding Possibilities for the Sale of Household Sprays" is a talk to be given by John Powell of John Powell & Co., New York. A discussion with participation from the floor is scheduled to follow.

The effect of the cement basing point decision, which ruled as illegal f.o.b. pricing, was to be the last topic considered at the Tuesday morning session, with Willard Van Horn, Jr., associate counsel for the U. S. Senate's Trade Policies Committee, as the speaker.

The group luncheon on Tuesday was to hear from Tom R. Reid, director of human relations, McCormick & Co., Baltimore, on human relations in industry.

Tuesday afternoon, the final session of the two-day meeting, is to be devoted mainly to reports of various N.A.I.D.M. committees. Following the election of officers and the report of the Insecticide Scientific Committee by A. C. Miller, chairman, of Gulf Oil & Research Co., Pittsburgh, Dr. E. F. Knipling, in charge of the Division of Insects Affecting Man and Animals, U. S. Department of Agriculture, Washington, D. C., is to speak on "Some Factors Responsible for Recent DDT Failures to Control House Flies." Dr. Knipling's talk is to be followed by a discussion period, moderator for which is Dr. Alfred Weed of John Powell & Co.

These committees and their work are to be reported on by their chairmen: Chemical Analyses—Insecticides, Dr. R. C. Haring, John Powell & Co.; Chemical Analyses—Disinfectants, W. A. Hadfield, Pennsylvania Salt Manufacturing Co., Philadelphia, chairman; Public Purchases Committee by R. O. Cowin, chairman, Standard Oil Co. (Ohio), Cleveland; Sprayer Committee, J. E. Reinhardt, Jr., Boyle-Midway, Inc., New York, chairman; Disinfectant Scientific Committee, Paul A. Wolfe, Dow Chemical Co., chairman.

A brief report on the progress being made by the Federal Trade Commmission on its trade practice rules for wax products is to be given by John D. Conner, Washington counsel for the N.A.I.D.M. The report of the Resolutions Committee and the covering of any unfinished business will conclude the business sessions.

The reception and banquet at 6:30 p.m. and 7:30 p.m., respectively, will mark the official close of the convention.

* * *

President's Address

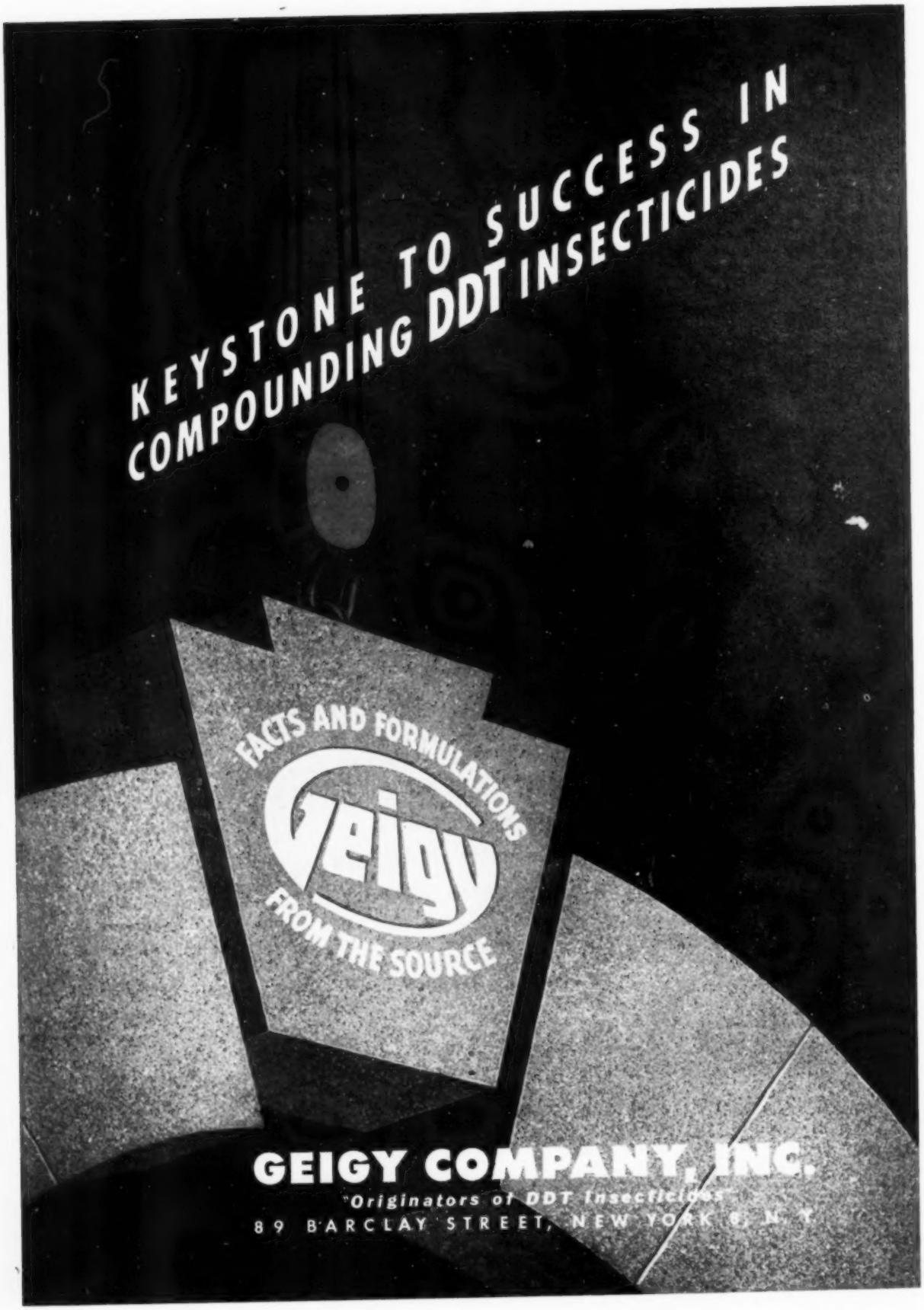
By Gordon Baird

As your president, I take great pleasure in welcoming you to the 35th annual meeting of NAIDM. During recent weeks, I have delved into some of the past records of this Association and have discovered many interesting facts. Some of you here who are not familiar with many of our past activities, may find this background information of more than passing interest.

The accomplishments of the little group which founded NAIDM back in 1914 were many, and these accomplishments were realized only after a number of "hard fought battles." As we meet today, this much larger group stands as a monument of accomplishment to those who first launched the initial activities of this trade association, — an association founded for the purpose of a better understanding of our mutual problems and better to protect the interests of the disinfectant and insecticide manufacturers of America.

Let us review some of the accomplishments of our association years ago. Cresylic acid, which was most important to the disinfectant trade, was scarce in this country, and to import it meant a high duty. This group worked diligently along with other associations, and we now have what is known as "American Duty Free" acid. Standards for the industry were worked out with the board in Washington, and played a distinct part in elevating the level of the industry and guiding it towards its present high code. Our association also was most active in working to eliminate such trade abuses as "commercial bribery." This was an important factor through the passing years in eliminating false claims made in advertising, labeling, etc. This group was the first to present to the American public the accomplishments of, and the necessity for, insecticides. They did this by radio. Possibly this method of educating the American people and giving them the benefit of information on the latest developments in our field should have been followed through. This is food for thought. In later years the methods of testing disinfectants were materially aided by this body, and the present F.D.A. test for evaluating the strength of disinfectants owes much to this group. Those interested in insecticides can recall our promulgation of the Peet-Grady tests, and many later improvements on this test. These are just some of their accomplishments, and each of us should indeed be proud to be a member of this trade group.

To get back to the present day accomplishments, your secretary, Mr. H. W. Hamilton, will fully advise you in his report regarding the activities over the past year. During our two-day session you will also hear from your various scientific matters and problems, as well as the progress that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FACTS AND FORMULATIONS
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has been made in overcoming some of these problems.

Your President has the utmost faith in our association and in the future of the industries represented by this association, but, frankly, we have a rough road to hoe in that there are still many practices prevalent in our business which should be eliminated for the good of all. During the coming year we are faced with a very heavy legislative session, and we will all have to work together toward fair and just regulations. Gentlemen, we must put up our fight before these laws are passed rather than cry about them after they have been enacted. We must definitely have a united front.

Mr. H. W. Hamilton has given many precious hours in guiding our association through this past year, and I certainly want to mention your genial vice-president, Mr. Leonard Oppenheimer, the chairman of the executive committee, who has also given most freely of his time in seeing that the wheels of progress in the association are kept turning smoothly. I also wish to express my appreciation to all chairmen and members of committees. This program will prove to you that they have most certainly done their part.

Before closing, I woul like to leave one or two additional thoughts with you. They have to do especially with general conditions in and about our industry, particularly the extent of sales and consumption of insecticides, disinfectants and allied chemical sanitation products. Frankly, I do not feel that we as an industry are getting as much business as we might, even under the conditions now existing. I feel that any decline in sales during the past year or two is merely temporary.

There are those among us here who have not hesitated to say that the household insecticide business is about dead. I strongly disagree with this. In my opinion, it is due to stage a strong comeback and in the not too distant future. But it will require greater effort and greater sales activity. The war days of easy selling are over, —but I believe that the business is there if we have the energy to go after it.

And in the case of other products made by our industry, I still feel that a far greater market could exist if we chose to develop it. Far wider consumption of disinfectants, of deodorant materials, of floor products, could be built up. But it cannot be built if we sit back and say that business is lousy and let it go at that. I urge you to get on your horses and go out after more business for the products which we all make and sell. Greater volume for each of us will benefit all of us. And we can get that greater volume if we will go out and fight for it. As I said before, the days of easy selling are over. Well then, let us recognize that fact and all get in the fight to make the world use more of our products.

Once again I want to acknowledge the honor which you have given me as your president. It has been a pleasure to work with the entire group —so again I express my apreciation.

* * *

Secretary's Report

By H. W. Hamilton

THE thirty-fifth annual meeting of the National Association of Insecticide and Disinfectant Manufacturers finds us assembled at the Hotel New Yorker in New York City. Our next meeting will be held June 13 and 14, at the Hotel Drake in Chicago.

Last year at Baltimore a recommendation was made that our dues be increased. Our income was not meeting our current demands and no surplus was being created. A few resignations were received. The treasurer's report this year will show that our reserve is being built up. It is still insufficient. The reserve should be about two and one half times our present carryover. There are many companies in our field or in allied fields who are not members that need our services,—and we need their cooperation.

This office has always emphasized the point that this is your association. No officer receives any remuneration. Your officers, the board of governors and the executive committee need a constant expression from you of your viewpoint on the many problems that arise.

Legislation

READ all your bulletins. Especially, give particular attention to the legislative bulletins. The time to get "mad" about some of the proposals in new laws is when they are still in the legislative committees, and up before legislatures for action. Your association representatives put up the best fight they can against undesirable laws—but they must have active support from all of you, individually.

The new Federal Act is now a year old. Six months have passed since many of our products have had to be registered. The cooperation of every individual man and woman connected with enforcement of this law has been splendid. Patiently and persistently they have explained the new law and its interpretations. They have cooperated on many of the individual rough spots. Hours have been spent trying to coordinate their work with that of the various states. In all this, keep in mind the fact that the law as now written provides the rules which they must follow. On the highway you are in trouble if you go through a red light. Why? These men who are always so patient and helpful cannot permit you to pass the "red light" in this new Federal law.

Efforts are being made to cooperate with all law enforcement officials, of the states and territories as well as the Federal government. They are all individually most cooperative and helpful. There is noted, however, a growing tendency on the part of these men as a group to ignore our well founded recommendations. We have three main points of difference—(1) declaration of ingredients, (2) fees, and (3) registrations under protest—to this might be added registration.

Ingredient statements on a household package are of little importance to the consumer. The manufacturer and competitor is interested. Performance is the real test. On this subject of performance, the manufacturer is always responsible for the final results of using a product, and must give proper directions. There is no reason why ingredients cannot be

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Cardis **is one of our new developments in the field of petroleum chemistry.** ***Cardis*** **has quickly found favor in emulsion polishes and in the manufacture of paste polishes, carbon papers and numerous other formulations where non-petroleum waxes were formerly thought necessary.**

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placed on products used in large volume if it is desired to do so, especially when highly toxic properties are present. Our recommendations on ingredient statement requirements for household and industrial products, which might be called the general recommendations of our industry are now being quite generally ignored. This is a difficult situation. It creates discord which could and should be avoided. We cannot allow dictatorial powers to be legislated into the hands of one or two men. We have a right as individual companies to our "trade secrets." While we may be able to pay registration fees, and add the cost to our products, we must protest this practice as creating an expensive nuisance without worth to officials or consumers. In most states it will not pay for the paper work alone to say nothing of policing, analytical checks, and development. New York City is the most densely populated area in the United States—is located in New York State—a prosperous agricultural state. New York State has all the problems of any other state in one political division. It has a relatively new pest control law. The law is adequate. It works. There is no registration. There is no fee. The law is a good one and is enforced. The people of New York State are adequately protected—that is what a law is for—to protect *all* the people. There is no discrimination against any manufacturer.

One other point: the term "economic poisons" is one that should be amended. Until recently the term has been generally accepted even by the members of our association. But, not all of our products *are* "poisons" in the true sense of the word "poison." It will be decidedly to our advantage, and a truer legend, to have "economic poisons" completely off all records and instead use the term "pest control products," or the word "pesticides," or something better that may be suggested.

Over 80 bulletins have been issued thus far this year by our Association. The expense of issuing these has been reduced because most of the work has been done in our own offices with the new machines authorized some time ago.

Committees

IT is most gratifying to sit in the office and see the correspondence and minutes of meetings of the various committees. The men on the scientific committees, especially, are doing outstanding and sincere jobs. Directly and indirectly every member firm—active and associate—owes to these men a debt of gratitude for their painstaking work.

In the field of sanitary supplies we have been active in the Federal Trade Commission's efforts to promote Fair Trade Practice Rules for the wax products industry. Our committees are working on methods of testing, specifications and many other details.

Aerosols, hand and power sprayers, and atomizers, are all being discussed to improve quality, usefulness and to find means of standardizing and evaluation.

In the field of disinfectants, committees are working on the maketing, testing, evaluating of the new quaternaries, and other organics.

The exhibit committee has carried out a difficult assignment.

The legislative committee is seeking greater cooperation with allied industrial groups. Representatives of our Association have officially appeared at all meetings and hearings where the interests of members could be served. Special bulletins have been issued covering such events.

O. T. I.

BY extending the period for the 1947-1948 OTI some money has been saved. A new 1949-1950 OTI is being prepared. This will be official for the two full years Dec. 31, 1948 to Dec. 31, 1950.

Your particular attention is called to an article in the "Scientific Monthly," November, 1948, entitled "The Science of Sanitation" by W. A. Simanton. A reprint has been sent to all members by the Executive office.

The preparation of a questionnaire to be mailed to each member for the purpose of establishing the interests of our membership is nearly complete. When filled in by the individual member firms it will enable your executive office to better serve you by knowing more specifically the type of information you want, and on which products and raw materials.

It has been a real pleasure to carry on the work as secretary. The cooperation of the officers, board of governors, executive committee and every member of the association has made the problems easier.

Chemistry of Insecticides, Fungicides, and Herbicides. Donald E. H. Frear. D. Van Nostrand Company, New York. 1948. $6.

The new edition of Dr. Frear's book is a great improvement over the first. The discussions of the chemistry of the older materials have been thoroughly revised to give a much better balanced presentation. The choice of references is good. Several new chapters have been added to cover the materials developed since the publication of the first edition, and the scope has been broadened to include herbicides. In general, the stress is on the preparation, physical properties, chemical reactions, and manner of use. However, considerable space is devoted to the effect of structure on toxicity as shown by the behavior of numerous isomers and analogs of known toxicants.

The author has attempted with considerable success an up-to-date coverage of a very rapidly developing field. In order to keep all of this information in reasonable bounds it was necessary to choose for discussion rather carefully those materials and properties which seem at present most important, and the author's choice of material seems on the whole satisfactory.

A considerable section on analytical methods for active ingredients in commercial products and for residues has been included. It seems to the reviewer that most of the readers of such a book are interested in the actual chemistry of the materials rather than in detailed laboratory procedures which can be found in the same form in the original literature, and that the space would be more valuable if used for amplified discussions of the properties of the materials.

(*Turn to Page* 153)

7 Sizes...One Quality
Hooker Paradichlorobenzene

HOOKER SIZE	MESH SIZE
Pea No. 1	Thru ⅜" on No. 2½
Pea No. 2	Thru No. 4½ on No. 7
Rice No. 1	Thru No. 7 on No. 9
Rice No. 2	Thru No. 9 on No. 12
Rice No. 3	Thru No. 12 on No. 32
Granulated	Thru No. 7
Powdered	Thru No. 32

Here are the seven sizes of Hooker Paradichlorobenzene from which you can choose the size that best fits your needs. No matter how you use Hooker Paradichlorobenzene, or in what size, it is of the same high purity that has made Hooker the leading supplier to the insecticide and disinfectant industry.

For detailed physical and chemical characteristics and list of informative literature write on your business letterhead for Technical Data Sheet 749-C.

SPECIFICATIONS

HOOKER PARADICHLOROBENZENE

Molecular Weight 147.0
Melting Point ..... 52.8° C Min.
Residue on Sublimation ..... none

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PARADICHLOROBENZENE

Supply Situation in Para Has Reversed Itself Price Has Dropped With Demand Easing Para (11¢ lb.) Now Quoted Below Naphthalene

A PREDICTION was made earlier this year that the supply of paradichlorobenzene would be "increased materially in 1948." Writing on the subject in the February, 1948, issue of *Soap & Sanitary Chemicals*, John R. Skeen of Foster D. Snell, Inc., New York, turned out to be a lot more accurate than the pre-election pollsters. In fact, the situation in para has righted itself with a vengeance now that supply seems to have overwhelmed demand, temporarily, at least.

One of the unusual aspects of the present situation is the price of para as compared with its competitive material, naphthalene. Paradichlorobenzene is now selling for 11 cents in car load lots, while napthalene is quoted at 13½-14 cents. Normally, the situation is just the other way around. For example, in 1937-38, para ranged from 12 to 14 cents a pound in large to small quantities, while napthalene was bringing 7¼ to 7½ cents a pound, depending on quantity.

Para production in 1947 was set at 34,521,000 pounds, while sales totaled 34,226,000 pounds. This represents quite an increase from 1925, when production figures on para ran around 1,988,733 pounds. For 1948, it now begins to appear that production of para will be well ahead of the 1947 figures.

A year ago para was bringing about 25 cents a pound or better in oddlots. A few weeks ago the price was cut from 12½ cents to 11 cents, which reflects accurately what is going on in the market, particularly from the supply standpoint.

Use of para has shown a steady, if not spectacular gain each year on the retail market. During the war years, of course, this trend was reversed and para for moth crystals and deodorant blocks was worth its weight in gold, almost literally. During those years, too, substitutes were tried—without too much success—and with the continued scarcity, demand, following its normal pattern, increased. Producers, getting set for a big year next year, are advertising the fact, mainly by word of mouth so far, that there will be plenty of para around for insecticides, deodorant blocks and other uses. It is hoped that packers will carry the story of ample para in '49 to their customers to increase the para sales volume by users.

One of the dominant notes in the market at the moment is the caution exercised by some producers and packers in discussing para. Their attitude seems to be motivated by the fear that consumers had better not get the idea that para is plentiful—which actually it isn't in terms of stock—lest prices sag below their present levels. Packers think the present price situation is a "normal" one, with the profit margin large enough for comfort, yet not too large to invite "marginal" operators. From the producer's standpoint the price of para is too low based on the cost of benzol and chlorine, from which para is made. In 1938, when para was being sold for around 11 cents a pound, benzol cost about 16 cents a pound and chlorine 5½ cents a pound in cylinders and $2.15 a hundred pounds in tanks. In 1948, the price of para is the same as it was 10 years ago, but benzol is now bringing 20-21 cents a pound and chlorine seven to 12 cents in cylinders and $2.40 a hundred pounds in tank cars.

For the above reasons it can be seen why producers in some cases, are inclined to be reluctant to discuss the situation or to predict what is going to happen after January 1, 1949. Some think prices may tend to become firmer after that date. On the other hand, it is known that there will be several new and large producers added to the roster of para makers after the first of the year.

Other factors that may be affecting the current situation are price cutting, which is attributed to "little fellows" who are trying to unload; new production, which has already come into the picture, and, again, price reductions by some of the large producers to scare off "marginal producers," who saw a chance to turn over a fast dollar during the lush days of 25 cent para.

The present list of leading para producers, which includes the elite of the chemical industry numbers among its members Dow, du Pont, Monsanto, Hooker, Niagara Alkali, Heyden, Solvay, Merck, and Rid-O-Moth Corp. Pittsburgh Plate Glass Co. and Glycol Products Corp. are reported having just entered or about to break into the para field. One large producer is reported curtailing his activities in the field.

Although para is widely used in insecticides, particularly for moth proofing and against the southern peach borer for which it is said to be singularly effective, its principal use is in deodorant blocks. For the first 10 months of 1947, acording to Skeen's article in February, 1948, *Soap & Sanitary Chemicals*, 14,850,000 pounds of para were used in the production of deodorant blocks. Total consumption for the period was 28,000,000 pounds. Para production for the first 10 months of 1948 is estimated at 28,770,000 pounds. Exports

(*Turn to Page* 153)

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the pioneer in the Aerosol Industry

is proud to list

its achievements in the field:

1. FIRST to develop metered, pre-blend method of filling—resulting in a *most uniform aerosol formulation.*

2. FIRST to manufacture a valve-protective cap, sealed at our plant — thus assuring an untampered and full-weight aerosol bomb.

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PURITAN COMPANY is 125 Years Old

The chubby Puritan, well known trade mark of the company in the automotive supply field.

WHILE the character of its business has largely been determined by changes in modes of power transportation, Puritan Co., Inc., Rochester, N. Y., currently celebrating its 125th anniversary, has kept pace with the changes and has thus survived. In fact, Puritan has more than survived in its century and a quarter of existence. It has prospered to the extent that in connection with the completion of its 125th year, it is in the process of building a new and greatly enlarged plant on McKee Road in Rochester.

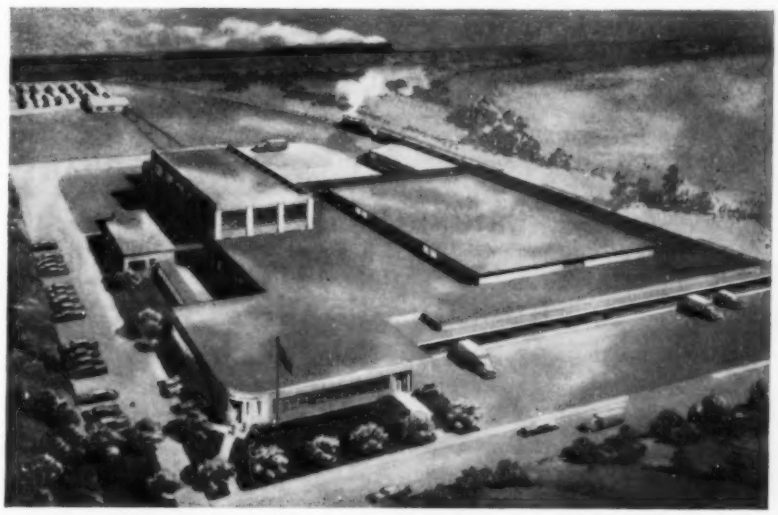
Puritan traces its origin back to a young English lad, Samuel Moulson, a soap and tallow chandler by trade, who in 1823, six years after coming to America, opened a soap factory at 46 Front St. in what was then known as Rochesterville. Earlier, Moulson had operated a meat market and decided to branch out into the soap field with his son. The product made in those days more closely resembled home made soap than the present article of commerce. Naturally, only small quantities were produced.

The connection between soap and cleaning materials and transportation is not obvious as yet. However, after the first few years of its existence, the Moulson firm became primarily interested in saddle soaps for walking boots, saddles, etc. Later the company's line of products was expanded to include soaps and polishes for fancy rigs and wagons, eventually covering metal polish and cleaners for automobiles and automotive chemicals. More recently, the firm, which is claimed to have made the first liquid metal polish in the U. S., following the trend in transportation, developed a line of chemicals for airplanes.

Puritan believes it is the oldest continuous manufacturing business in the city of Rochester and the second oldest soap manufacturing concern in the United States. Although the firm started out as a soap making concern, today the production of soap is rated as third on the company's production schedule. Today Puritan soap is mainly of the surgical green variety, used chiefly in hospitals. The bulk of the company's products consist of automotive chemicals.

The early days of the firm were far from trouble-free. The company encountered the usual difficulties from fire in 1844, which destroyed the plant; theft; and further fires in 1865 and 1867. For a period of about 10 years, from 1863 to 1872, Moulson was in constant difficulty with the city authorities over the "nuisance" created by his grease-boiling plant. After a number of threats of eviction and imposition of fines, Mr. Moulson eventually moved his factory to a new, two-story building at 25-27 Water Street North. Here was built what was termed "an extensive works," fitted with $15,000 worth of soap making equipment capable of producing 60 tons of soap a month in what was claimed to be the finest factory in the State of New York. The odor problem persisted, however, and the courts clamped down hard on Mr. Moulson, fining him $250 and ordering to move within 10 days.

New and greatly enlarged plant of Puritan Co. now being built on McKee Road in Rochester, N. Y.



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125 YEARS OF CHEMISTRY FOR TRANSPORTATION

ALEXANDER BEACH

JOHN F. BUSH, JR.

SAMUEL MOULSON

Above: The founder of Puritan, second oldest soap firm in the U. S. and oldest continuous manufacturing plant in Rochester. Alexander Beach is president and John F. Bush, Jr., vice-president. Upper left is logotype used in Puritan advertising and literature to commemorate 125th year.

Three years later the Moulson plant was still located at the same site and once again Mr. Moulson was brought into court. The factory remained on Water Street until 1894 when Mr. Moulson retired at the age of 83 and sold out the business. He died the same year.

The firm was purchased by Thomas Dransfield, owner of Flower City Soap Co., located at 500 Exchange St., Rochester. He took over the business and used the Moulson Soap Works name. Later, a companion company was set up, White Swan Soap Co., which existed only from 1900 to 1901, and is claimed to have turned out one of the first floating bar soaps. To help sell its product, the company had a wagon with a large white swan painted on it. The wagon, appropriately enough, was drawn by two white horses in tandem.

In 1903, Harry Green, Milo D. Olin and John Bertrand bought the company and Dingman Soap Co. of Buffalo, and acquiring the Puritan name and trademark which had been in use since March 1, 1884 by Granite City Soap Co., Newburgh, N. Y., and established Puritan Soap Co.

In 1924, the four-story factory building and two-story adjoining office building on Exchange Street, were bought by three Buffalo men: Martin J. Cabana, Kenneth MacDonald and John F. Fox. The chief products of the company at the time were oil soaps, nickel and metal polish. In December of the same year the company was resold to Harry Green. Four years later, in 1928, the company again changed hands when Pritchard Strong, late New York State Assemblyman purchased the then 105 year old business from Harry Green. This acquisition marked a turning point in the company's history.

The firm began a program of expansion, which included broadening of manufacturing activities to include production of cleaners and polishes for automobiles, as well as household chemicals. It was during the period of the last 20 years that such diversified products as hydraulic brake fluid, shock absorber oil, gasket adhesives and hydraulic brake flushing fluid were produced. A large share of the company's production was war material for the Army Air Forces during World War II.

The firm again changed hands in 1938, following by a few months the death of Mr. Strong. In January, 1938, John F. Bush, Jr., Alexander Beach and F. Dwight Sage acquired Puritan Soap Co., changing the company name to Puritan Co., Inc., in the following year when Mr. Sage relinquished his interest in the firm. Plant and office were then moved to 573 Lyell Ave., present site of the firm.

While automotive chemicals are the main part of Puritan's business, other cleaning materials such as liquid coconut oil shampoo, liquid coconut oil soap, vegetable oil soaps, scrub soaps, including the new "Liquid Pinezo" neutral liquid scrub soaps and a green soap in jelly form are made by the firm and represent about a third of its output.

Another major development in the history of the company took place in 1943 when Genesee Research Corporation, a wholly owned subsidiary was set up as a stimulus to research and to make possible certain contract manufacturing and packing business.

Rigid chemical control of raw materials, manufactured and finished products is maintained at Puritan by a staff of chemists working under Dr. C. M. White. All of the firm's products are under constant test for possible improvement. As new materials become available they are studied for possible application to Puritan products.

The company's slogan "125 Years of Chemistry for Transportation" supplants an earlier one: "Made on Honor—Sold on Merit."

The two men responsible for growth and management of the Puritan business in the past ten years are Alexander Beach, president and John F. Bush, Jr., vice-president.

We Salute

THE NATIONAL SANITARY SUPPLY ASSOCIATION

and extend our best wishes for the success of the eastern regional meeting of the association being held December 9 & 10 at the Park Central Hotel, New York City.

The program of regional meetings which the N. S. S. A. has successfully carried through over the past several years has been an important influence, we believe, in extending knowledge on the manufacture and most efficient use of sanitary supplies, and also in advancing the influence and reputation of the association.

As the N. S. S. A. has expanded and improved its activities for the benefit of the industry, so has the Buckingham Wax Company expanded its own program. With new production facilities and an enlarged research and development staff we are now ready to serve you more quickly and efficiently than ever before.

See Mr. Irving Wexler in his suite at the Park Central.

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Our elaborately equipped soap plant insures delivery of sparkling clear soap, with REAL SALES APPEAL. They are all AGED, THOROUGHLY REFRIGERATED AND CAREFULLY FILTERED WHILE COLD. GUARANTEED TO TEST THE PERCENTAGE SPECIFIED.

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LIQUID SOAP SPECIALISTS

Asks Wholesale Grocers Sell Only Independents

"THE wholesale grocers of the United States would like to have the exclusive job of distributing all soap products to all the independent retailers of this country," according to M. A. Christopher, executive vice-president of the Missouri Valley Wholesale Grocers' Association.

In a recent message to members of the Association, Mr. Christopher pointed out that the nation's wholesale grocers are in a position to distribute the products of soap manufacturers more economically than they can do by direct selling. The complete distribution of soap products through wholesale grocers would eliminate complaints by independent retailers against the "floor protection" policies of the soap manufacturers, he declared.

Mr. Christopher's message continues with the statement that "wholesale grocers are certain that they can do as good and as effective a job of distributing soap as the manufacturers do in making it. They believe that they can save the manufacturers money, if given the job of supplying all soap to large and small independent retailers in the country. Chains which maintain warehouses are different. Such organizations perform the same wholesale functions as the wholesale grocer. Supplying that segment of the trade is out so far as the wholesaler is concerned."

Jobs such as paying salesmen, billing, delivery and account collections are the natural function of the wholesale distributor, Mr. Christopher stated. The distributor is better equipped to do this job than the manufacturer, and can do it at less cost. In addition, the wholesaler is better equipped to see that the retailer will carry adequate stocks to meet consumer demands.

"The Federal Trade Commission recently has attacked soap manufacturers for guaranteeing warehouse floor stocks in the hands of wholesalers and chains against price declines and at the same time not protecting the stocks in the hands of retailers. When prices decline the stocks in central warehouses of wholesalers and chains can be checked and credits issued for price declines. It is virtually an impossible task to check soap stocks in 500,000 retail stores," according to Mr. Christopher.

———•———

3rd Quarter Soap Sales Up

Total sales of other than liquid soap reported by all firms making these figures available to the Association of American Soap & Glycerine Producers, Inc., New York, were larger both in terms of dollars and pounds in the third quarter of 1948 than in the second quarter, according to figures released recently by the A.A.S.G.P. Soap sales for the first three quarters of this year, however, were smaller in pounds than in the comparable period of 1947. The soap produced this year brought more than a year ago, according to the figures. Liquid soap sales by weight and in value were smaller in the first nine months of 1948 than in the corresponding period a year ago. As between the third and second quarter, 1948, totals for liquid soaps also showed a decline.

In the first nine months of 1948, 1,945,103,000 pounds of other than liquid soap worth $460,292,000 were produced by all firms reporting to the Soap Association. During the comparable period of 1947, 2,017,690,000 pounds of soap, valued at $450,834,000, were made. In the third quarter of 1948, 655,983,679 pounds of soap, worth $149,850,413, were reported produced by Soap Assn. members as compared with 631,308,217 pounds, valued at $144,329,339, in the second 1948 quarter and 696,506,000 pounds, having a dollar value of $144,564,000, in the third quarter last year.

Liquid soap production by all members of the Soap Association giving figures amounted to 2,383,383 gallons, valued at $3,495,160 in the first nine months of 1948. Third quarter 1948 totals reported by the Soap Association were 688,259 gallons, worth $1,242,281.

BOOK REVIEW

(*From Page* 145)

The book is somewhat marred by a number of inaccuracies and misleading statements. For example, on p. 6 the statement is made that aerosols "partake in some measure of the properties of a gas." This statement is unfortunate without drastic qualification. On p. 65, technical DDT is stated to be more readily decomposed than the pure compound, while it has been found that the opposite may be true in the presence of certain catalysts. On p. 68 it is implied that DDT dusts are usually made by direct milling of the technical product with sufficient diluent to make a finished dust, with no mention of concentrates to be diluted later by ordinary mixing processes. On p. 83, chlordane is represented as being prepared by the chlorination of a coal tar hydrocarbon, which is questionable. Such statements are unfortunate not only in themselves, but also because their existence might cause one to question other statements which are perfectly correct.

On the whole, however, the book contains a wealth of useful information and deserves a place in the library of every worker in the insecticide field.

—L. B. Norton

PARA MARKET OUTLOOK

(*From Page* 147)

of para during January-June of 1948 totaled 1,695,000 pounds, of which 1,324,000 pounds were shipped to Canada.

Although it now appears that barring some unforeseen upheavel para should be in good supply and at relatively low prices in 1949, the material is yet to be produced. In other words there is no stock of para, but merely production capacity. One packer pointed out that, while para is said to be available, if he were to place an order for several carloads right now it would take some time before delivery could be made. In other words, large scale para production in 1949 is still in the talking stage.

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LIQUID ALL-PURPOSE CLEANER

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SYNTHETICS DETERGENTS

(*From Page* 39)

million lbs. would be ample for this purpose. On this basis and taking into account the estimated sales volume in millions of lbs. as 35% active, retail sales volume is estimated as follows:

	1944	1945	1946	1947	1948
Retail	70	125	300	350	400
Industrial	300	300	300	350	400
Total	370	425	600	700	800

ALTHOUGH basic raw materials for detergents rest principally on cheap raw materials, the retail structure can be expected to respond quickly to price fluctuations of soap. Government reports appear to indicate a heavy 1949 supply of tallow which would tend to drive prices down. For this reason, new ventures in retail synthetics should be handled with considerable caution. It appears more than likely that present retail levels will not be exceeded for some time to come.

Presently developed products may be sharply divided into two classes —(1) light duty products for dishwashing and laundering of fine fabrics and (2) heavy duty types containing builders such as tetra sodium pyrophosphate, trisodium polyphosphates, sodium carbonate, sodium metasilicate, etc. The first class is represented by the early retail products on the market; — "Dreft," "Vel," "Swerl," "Breeze," "Trend," etc. The builder is a neutral salt, chiefly sodium sulfate. These products represent in the synthetic detergent field what "Lux," "Ivory Flakes," "Kirkman's Flakes" etc. do in the soap field. The neutral salt assists detergent action and must be classed as a builder. For cottons and heavy duty laundering however, these products leave much to be desired. Two developments stemmed from this need; (1) the use of carboxy methyl cellulose as a dirt suspending agent and (2) the use of alkaline builders as above enumerated. (There is no reason of course why carboxy methyl cellulose can not be used alone with a neutral detergent of the "Vel" or "Trend" type.) This class of product is represented by "Tide," "Fab" and "Surf." Corresponding products in the soap field would be "Rinso," "Oxydol," "Super Suds," etc. The building of such a product is based on the ratio of about 2 parts of active detergent being the equivalent of about 5 parts of fatty acid converted to soap. The alkaline builders are added as required and the balance made up with sodium sulfate or other neutral salt. If carboxy methyl cellulose is also added, about 5-8% of the weight of active synthetic detergent present should be employed. The base for the synthetic may be any one of a number of classes such as alkyl aryl sulfonates, alcohol sulfates, substituted amides, etc. The particular base selected should have all the characteristics of a good detergent and be non-hydroscopic. This last factor is one often overlooked, with resultant packaging difficulties. Certain alkylated aromatic sulfonates have proved very useful.

Another development is the use of non-ionics to increase detergency. Stil another development is the use of non- sudsing non-ionic detergents of the class of "All." Liquid foaming detergents are represented by "Glim" and "Tern." Such products entail high packaging costs.

Just what new technical developments are in store remains to be seen. At any rate, the general manufacture, packaging and advertising of retail synthetics does not differ greatly from their soap counterparts. For success in this field a new producer should be prepared to manufacture a quality product based on low cost material and backed by an extensive research program. He should be satisfied with a medium production in a local area where the water hardness runs preferably over 150 PPM, or should be prepared for an extensive and sustained national advertising campaign.

Koppers Handles Agitator

Koppers Co., Pittsburgh, announced recently the signing of an agreement with Dr. Bronislaw Goldman, Pittsburgh consulting engineer, whereby it will be able to furnish the Goldman agitator for chemical and other industrial plant installations. The agitator is so constructed that it propels liquid to the sides of the tank and upward. At the top, the liquid is drawn to the center and pulled downward through the hollow axis upon which the agitating blades are fastened. The liquid is expelled from the bottom of the axis to repeat the process.

PINE OIL

(*From Page* 137)

Oil of cedar leaf	2 lb.
Pine oil	2 lb.
Paraffin oil	2 gal.
Oil-soluble color	sufficient

Various other sanitation and maintenance specialties, some of them patented,(32) make use of the several properties found in pine oil. It is, for example, a good paint brush cleaner and may serve a useful role in the formulation of spot and stain remover fluids.

In addition, pine oil has been used in the formulation of insecticides, fly and mosquito repellents, and cattle sprays and dips. Without going into details on these latter phases of utility, it may be noted that pine oil has been used as a germicidal perfuming agent in insecticidal household sprays.(14) In cattle sprays,(12) it has been found that pyrethrum-pine oil combinations had substantially higher knockdown and killing power than the same amount of pyrethrum used alone. Acting as a true activator, pine oil also contributes to the repellency of the sprays.

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Three popular sizes, 6, 8, and 11 gallon . . . Standard and Heavy grades. Corrugated and desired smooth side types. WRITE FOR BULLETINS #8 and #10.

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Large sturdy cans in 20, 22, 24 and 32 gallon sizes. Standard, Heavy and Heavy Duty grades. WRITE FOR BULLETINS #22, #24, #32 and #42.

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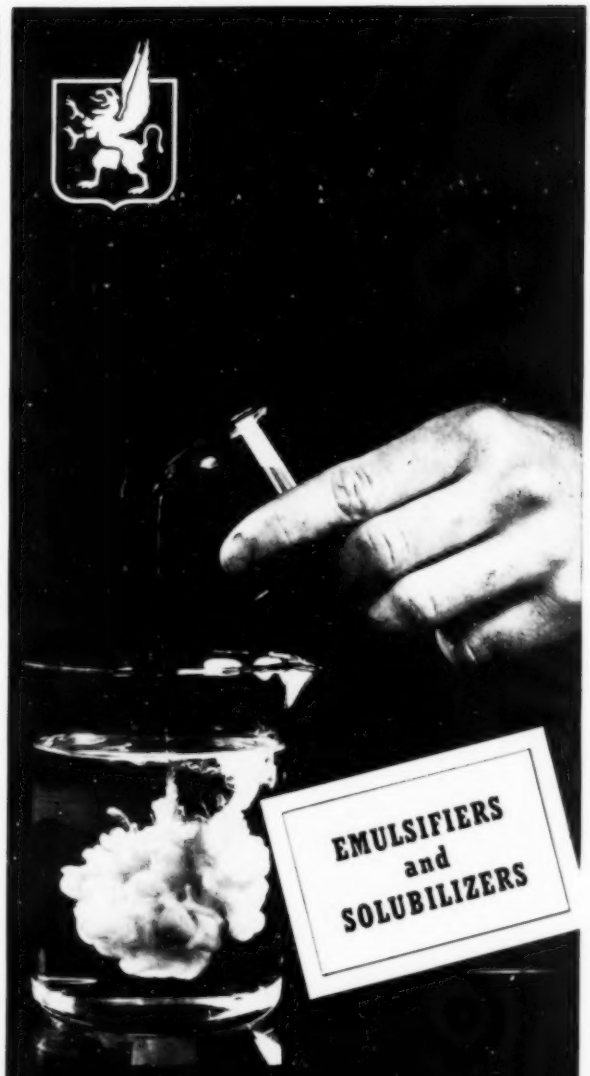

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ANTISEPTIC SOAPS

(*From Page* 45)

forming mono-alkali salts and leaving the second phenolic group free. This theoretical view partially explains why these substances retain their germicidal properties in alkaline media.

Of the compounds mentioned above, 2,2'-dihydroxy-3, 5, 6-3', 5', 6'-hexachloro diphenylmethane, for brevity's sake called "G-11",* has been studied more extensively. It is a white crystalline solid, melting at 164-5°C., and is soluble in acetone, alcohol and dilute alkalis although it is insoluble in water. When evaluated in the form of its monopotassium or sodium salt, as it is present in soap, this substance remains strongly bacteriostatically and bactericidally active against *S. aureus*, having an approximate phenol coefficient of 125 at 37°C. when tested according to the standard method as described in Food and Drug Administration Circular No. 198. The compound exhibits similar activity towards other gram-positive bacteria but is considerably weaker against gram-negative strains such as *Escherichia coli* and *Salmonella typhosa*, where the phenol coefficient at 37°C. is only 20. In order to be active against the latter, the soap must contain relatively higher percentages of cocoanut oil.

* Trade mark of Sindar Corp., New York.

Data on "G-11"

"G-11" does not result in irritation nor in sensitivity, either by itself or when used in soap, according to the studies of Traub, Newhall and Fuller,(23) Udinsky (24) and others. (25) Seastone (26) has substantiated the work of Traub et al., but our laboratory has been unable to duplicate Udinsky's results. Therefore, we are inclined to hold the validity of Udinsky's work in abeyance, until it is substantiated by another investigator.

In addition, a group of 400 individuals has used a soap containing two percent "G-11" every day for over two years without an instance of irritation or dermatitis.(27)

Toxicity studies (27) indicate that "G-11" is a non-toxic chemical when taken orally. The results, translated into more understandable terms, mean that a 150-pound adult would have to swallow at least 851 grams (almost two pounds) of soap solids containing two percent "G-11" to be endangered.

Among the other results obtained, the most significant are:

1) The use for a week of a soap containing two percent "G-11" resulted in a much lower bacterial count on the hands and forearms of a group of subjects studied than a similar group using the same soap without "G-11". By way of elucidation, the group employing the antiseptic soap had more than a 94 percent reduction (23) of the resident bacteria of the cleansed areas as evidenced by the results of the Price (14) test.

2) A week's use of a soap containing two percent potassium mercuric iodide (neko soap) does not reduce the bacterial flora of the skin appreciably, since the average reduction amounts to only 22 percent, as compared with ordinary soap.(23)

3) Hand-washing experiments established that optimum results are obtained by daily use of antiseptic soaps. Whereas a 94 percent reduction of resident bacteria is obtained by daily use, occasional usage results in only a 53 percent reduction.(23) This work was verified by Seastone who found that lapses of longer than two days reduce the effectiveness of antiseptic soaps.(26) Other investigators (5,6) also found that the continued use of antiseptic soaps decidedly and permanently reduced the number of resident bacteria, noticeable effects occurring in as little as one week.

4) The use of two percent "G-11" soap is also efficient in reducing the number of pathogenic and non-pathogenic micro-organisms found on the human skin.(25) In an industrial case study, it was found that several cases of dermatitis were considerably eased by the use of antiseptic soap. In another industrial study, antiseptic soap was shown to clear the skin of blackheads, pimples and other surface blemishes. More rapid healing of lesions in individuals using such soap is also indicated.

5) The available evidence suggests that "G-11" is adsorbed by the skin and is retained for a considerable period, exerting a steady bacteriostatic —if not bactericidal—effect on the resident flora.(26) Though "G-11" exercises a marked bacteriostatic effect, even in high dilution,(28) the reduction in resident bacteria was not due to bacteriostasis but rather to the bactericidal properties of the germicide.

6) "G-11" possesses the specific property of having a very high dilution coefficient, a useful characteristic for antiseptics from the viewpoint of

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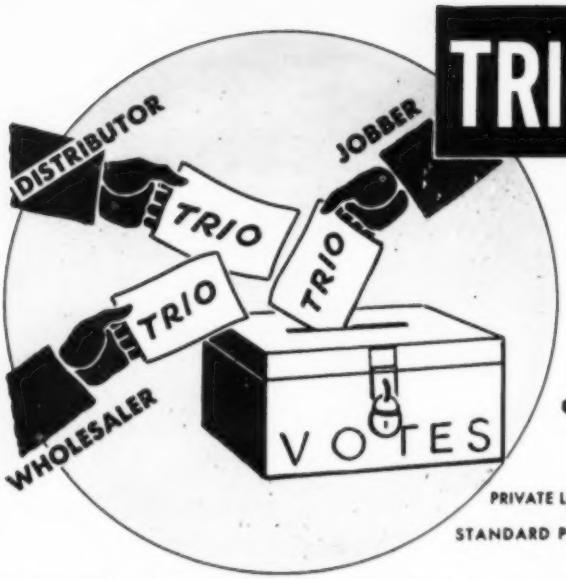

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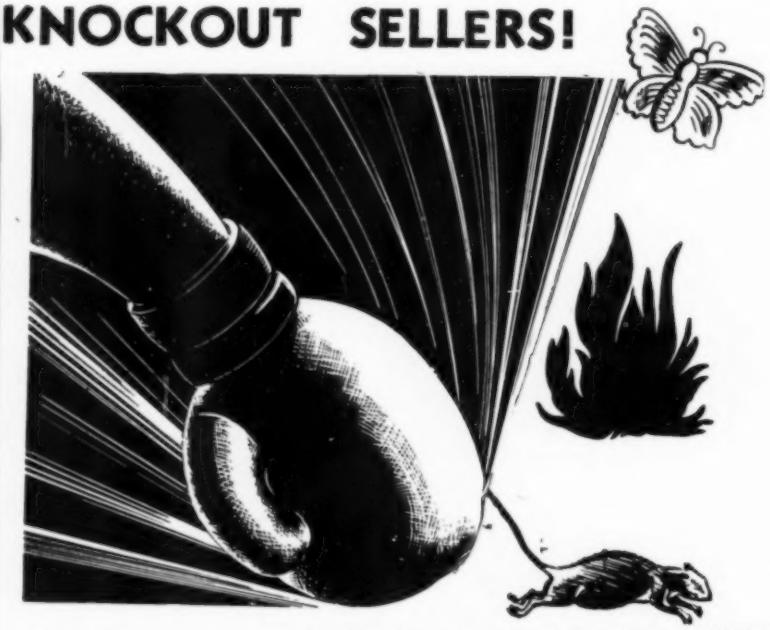

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safety in use, allowing for personal errors in dilution without serious loss in bactericidal power.(29)

7) The use for one week of antiseptic soap containing two percent "G-11" decreases the bacterial count of the skin to the point where at the start of scrubbing in the surgical or pre-operative scrub-up it is sufficiently low so that the scrub-up time could be considerably reduced and that alcohol or iodine, which are generally standard practice, could be eliminated. As an example, the initial wash with antiseptic soap resulted in a 10 percent reduction of resident bacteria as compared to the *seventh* wash using ordinary soap, iodine and alcohol. Furthermore, the subjects employing antiseptic soap but no iodine nor alcohol had 69 percent less resident bacteria remaining than those subjects using the standard hospital scrub-up technique including iodine and alcohol. (23) These results were substantiated by Seastone.(26)

8) Antiseptic soap has a good preventive effect on secondary infections from minor injuries. Exclusive use of such a soap reduces the possibility of infection from the usual abrasions and superficial wounds.(23) It has been shown that the bacterial flora of skin so treated is quite low even though the hands might be dirty and apparently quite contaminated. (27) The case of a football player, fresh from a two hour practice session after which he did not wash, is cited to illustrate this point.

9) Pathogenic *Staphylococci* disappear from the skin of carriers after one week's use of antiseptic soap containing two percent "G-11".(25) This alone is indeed a point worthy of grave consideration.

10) When changing gloves between operations, a brief wash (approximately 30 seconds) with antiseptic soap is sufficient to keep the skin counts at a low level. Whereas the average count of a group using ordinary soap was 544,000, that of a group using two percent "G-11" soap was only 2,400, a reduction of more than 99 percent.(26)

11) Heat and cold do not affect such antiseptic soaps for, upon return to room temperature, these soaps possess their original antiseptic properties.(30)

Antiseptic soaps in liquid form containing two percent "G-11" will, in the very near future, be available for conventional liquid dispensers.

Possible Uses

THE use of an antiseptic soap for medicinal purposes is obvious. As such it may be employed principally for pre-operative scrub-ups and routine washing for doctors, nurses, orderlies, anaesthetists, technicians and even the sick. The use of such a soap in hospitals, clinics, sanitoriums and medical and dental offices is meritorious, even if adopted as a preventive measure.

Another important use for antiseptic soaps is in restaurants and taverns, where it should be available to the personnel, particularly food handlers, thus reducing the possibility of communicating diseases.

Barber shops and beauty parlors are other public establishments that are in need of antiseptic soaps, which can reduce skin irritations and inhibit infections. The factory employing workers exposed to acids, abrasives, alkalis, other corrosive chemicals, cutting oils, solvents, etc., the machine shop, the sheet metal shop, indeed all heavy industry, should be interested in an antiseptic soap for keeping infection and irritation under control, thereby reducing absenteeism. Such savings are reflected in greater employee morale, stronger employer-employee relationship, increased production and reduced overhead in the form of lowered medical and hospital expenses. It is merely another form of insurance.

As a matter of fact, antiseptic soaps should be employed in all places where there is at least an average chance of communicating disease, for example, public toilets and washrooms, hotel rooms, train and airplane washrooms, public bathing houses, camps, cabins, etc.

Conclusion

THE ultimate dream of health authorities is to eradicate disease completely. A strong step in this direction can be taken by the universal adoption of antiseptic soaps designed for bathing, laundering, shaving and washing. This should be done in the public interest for more thorough cleanliness, reduction of contagion and for the general health.

Acknowledgments

The author is considerably indebted to Dr. G. F. Reddish, Director of Bacteriological Research, Lambert Pharmacal Company, St. Louis, for proof-reading the manuscript and for his many valuable suggestions.

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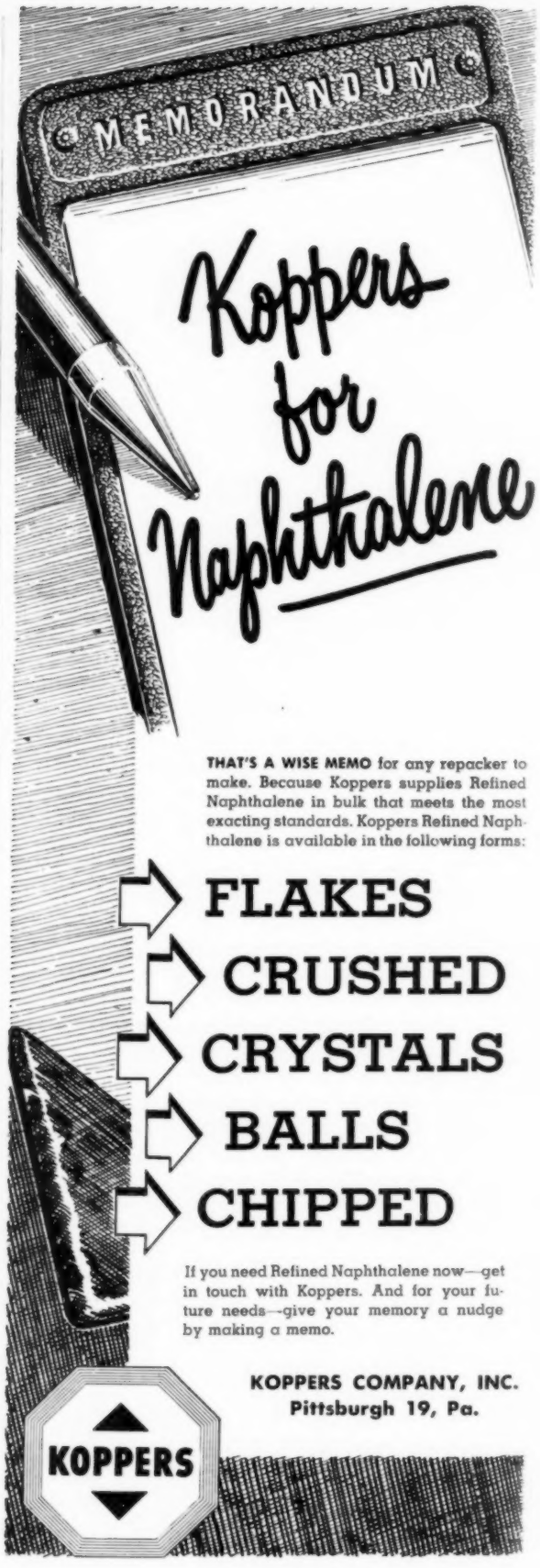

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TECHNICAL BRIEFS

From Current Literature in the Sanitary Products Field

Pyrethrum for Grain

The Kenya Board of Agriculture has reported the results of a series of experiments carried out with pyrethrum powder as an insecticide to protect stored grain. Very effective protection against weevils was given over a period of eight and a half months, by mixing one pound of ordinary pyrethrum powder into each sack of grain. At the end of that time, treated and untreated sacks of wheat were valued. The treated sack was assessed at nearly double the untreated sack, which had suffered from insect damage. *Chem. Age.* 59, 398 (1948).

Sanitization of Dishes

Disinfection of dishes and glassware by quaternary ammonium compounds is said not to be dependable because they cause organisms to clump together and then kill individuals within a clump more slowly than the decline in plate counts indicates. Thus the usual extrapolation to zero is unwarranted. The reasons are that the compounds do not penetrate grease or other soilage, and vary in effectiveness when used in different waters and against different organisms. They are inactivated by less than 50 p.p.m. of milk, egg yolk, or gelatin in solution. No chemical test devised to prove the presence of these agents in active form was found dependable. E. C. McCulloch, S. Hauge, and H. Migaki, *Am. J. Pub. Health* 38, 493-503 (1948).

Odor for Insecticides

In choosing an odor for an insecticide, the primary factors are good coverage and a character that will last, as long as required without changing. Consumer testing is the best method for finding out the desirable odor types. The best type resists classification; it is pleasant but nondescript. Often the popular scents for insecticides are suggestive of ozone, lavender, pine, cedar, and sweet citrus notes. The proportion of perfume to use is 0.1-0.25 per cent. Proper perfuming should help establish consumer confidence and acceptability. *The Gitaudanian*, p. 5, Sept. 1948.

Insects in Warehouses

Trials of materials against insects in grain warehouses were made. The toxicity of "Gammexane" to the rice weevil, the red flour beetle, and the saw-toothed beetle, was determined by (1) mixing the insecticide with grains, (2) dusting the inside of bags, and (3) dusting the storage sheds and outside of the bags. When an insecticide consisting of talc and 0.5 per cent of "Gammexane," "D230," was mixed with wheat grains, 100 per cent of the rice weevil was killed within six days. The red flour beetle and saw-toothed beetle were less affected.

When bags of grain were dusted with one per cent of "D230," all the insects were killed after about seven weeks, the effect of the treatment lasting even after 11 weeks. By dusting the warehouses in which bags of rice and wheat were stored, one per cent of "230" gave 100 per cent mortality on the second day. M. Q. Khan, *Current Sci.* (India) 17, 127-8 (1948); through *Chem. Abs.*

Derris Determination

Derris dust is a potent fish poison and can be determined biologically by means of this property. It is more poisonous than the same amount of crystalline rotenone. With *Gasterosteus aculeatus* the death percentage after 24 hours, on 20-minutes' exposure, is a very accurate measure of the amount of rotenone. Since DDT and "Gammexane" are without effect it is possible to determine rotenone in mixtures of insecticides. J. J. Fransen, Landbouwk. Tijdscher, 60 228-36 (1948); through *Chem. Abs.*

Physiological Effects

Studies were made to determine whether modern contact insecticides exert a specific toxic action on the tissues of insects. In order to ascertain whether the cuticle of insects in comparison with the skin of other animals will absorb toxic quantities of these insecticides, the action of DDT and *gamma*-benzene hexachloride was compared in terms of LD_{50} in mg. per kg., on the skin (method 1), and by intravenous or intraabdominal injection (method 2).

A comparison of different insecticides on vertebrates and on insects shows the following:

Insecticide	*Method*	LD_{50} *for vertebrates* mg./kg.	LD_{50} *for insects* mg./kg.
DDT	1	300-3000	5-30
DDT	2	12-75	5-60
Benzene hexachloride	1	300-500	0.4-7.5
Benzene hexachloride	2	less than 50 to less than 75	3-17
Rotenone	1	very high	about 30
Rotenone	2	0.35-2	6-15
Strychnine	2	0.2-10	500

The results show that the toxicity of DDT to vertebrates and insects is of about the same order. DDT, benzene hexachloride, and rotenone have about the same activity on insects whether applied to the cuticle or injected into the body. Evidently the cuticle offers no barrier to the entrance of these compounds, hence their apparent specific toxicity to insects. No poisons have been discovered that have a specific toxicity to the physiological process of insects. On the other hand, strychnine is a specific "mammalcide."

Research on new insecticides should be guided by a knowledge of their power to penetrate insect cuticle, by a high solubility in lipoids, and by specific absorption by chitin. The fact that *gamma*- benezene hexachloride is often more toxic to insects than DDT is obviously based on differences in rate of penetration.

Experiments were made to determine the relative toxicities of *alpha-, beta-, gamma-, and delta-*

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benzene hexachloride. The *gamma* isomer proved most toxic, in confirmation of previous work. In order to prove whether the greater toxicity of the *gamma* isomer rests on a different rate of penetration through the cuticle or on a difference in actual internal toxicity, the pure isomers in oil-water emulsions were injected into the roach *P. americana*. The LD_{50} for the *gamma* isomer was about 17 mg./kg. The other isomers must give much higher values, since 85 mg./kg., the highest practical dose, produced no effect. Thus, toxicity of the *gamma*-isomer is not caused by rapid penetration but is the result of a special stereo-configuration of the molecule which permits attack on unknown physiological processes. D. Dresden and B. J. Krijgsman, Bull. Entomol. Research 38, 575-8 (1948); through *Chem. Abs.*

Gaseous Insecticide

The physicochemical properties of "Tritox," trichloro acetonitrile, make it suitable for use in living quarters. It is a water-clear or at times yellowish fluid slightly soluble in water. The saturation point in air is about 600 grams per cubic meter at normal room temperature. The compound is not easily inflammable and can be safely vaporized with any of the usual sources of heat. In dry air it does not attack iron, lacquer, or upholstery. In air having a high humidity, it tends to cause rusting. Small metal surfaces such as door knobs and locks should be covered with oil before fumigation. Dry food may be left safely in the space to be fumigated. Fresh fruit, potatoes, plants, and oily substances should be removed.

"Tritox" is toxic for all stages of bedbugs even at temperatures as low as 6°C. when these are exposed for 20 hours at a dosage of 30cc per cubic meter. Only six hours with a dosage of 20cc. per cubic meter were required at 25-30°C. or normal room temperature. In practice, overnight fumigation will suffice for either cockroaches or bedbugs. Temperatures lower than 15°C. are not recommended for clothesmoths.

The toxicity of "Tritox" for man is about 1/20 that of hydrogen cyanide. It produces such strong irritation to the eyes, nose, and throat that a person is not likely to remain in it long enough for it to be dangerous. Application can be made by pouring the material on absorbent disks and hanging these in the space to be fumigated. The usual precautions on re-entering fumigated quarters should be taken. G. Peters, Z. *hyg. Zool Schadlingsbehampf* 32, 179-90; through *Chem. Abs.*

Continental's New Plant

The new fibre drum plant of Continental Can Co. at Tonawanda, N. Y., was scheduled to start production on "Leverpak" drums Nov. 15, the company announced recently. The plant was designed for the exclusive manufacture of the drums, which range in size from 12 to 75 gallon capacities. The building is of one story design, providing approximately 200,000 square feet of floor space. It is the third such plant put into operation by Continental.

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TRADE NEWS

A.A.E.E. Hears Hamilton

H. W. Hamilton of H. W. Hamilton Co., New York, and secretary of the National Association of Insecticide & Disinfectant Manufacturers, is scheduled to address the annual meeting of the American Association of Economic Entomologists at the Hotel New Yorker, New York, Dec. 16, on the subject: "How the Economic Entomologists Can Cooperate with the Insecticide Industry."

New Gulf Insecticide

Gulf Oil Corp., Pittsburgh, has just announced the development of a new type insecticide, using chlordane, to be marketed under the name, "Gulfspray Roach and Ant Killer." Besides chlordane, the new product contains pyrethrum and thiocyanates. The two percent chlordane concentration in the new insecticide is claimed to be toxic to roaches coming in contact with sprayed surfaces for up to six months after thorough application, according to the company. The new Gulf insecticide is said to follow two and one-half years of field and laboratory testing.

New Rex Deodorizer

Rex Research Corp., Toledo, recently introduced a new deodorizer utilizing the low pressure aerosol type dispenser. Known as the "Rex Deodorizer," the product comes in three odors: pine, cologne and lavender. The deodorant is made to retail for about $1.59. Operating on the same principle as the low pressure aerosol insecticide bombs, the "Deodorizer" is sprayed by means of a finger-tip control valve at the top of the dispenser.

Riedeburg to Hardy Co.

M. W. Hardy & Co., New York, have announced the appointment of Theodore Riedeburg as sales manager of the company's new domestic sales department. The Hardy company is a distributor of heavy and fine chemicals, vegetable oils and allied products. Mr. Riedeburg was until recently in charge of east coast operations for McLaughlin Gormley King Company, Minneapolis. Before that, he had been connected with Dow Chemical Company and Westvaco Chemical Division of Food Machinery & Chemical Corp.

THEODORE RIEDEBURG

The domestic sales department of the Hardy Company will represent chemical manufacturers in obtaining improved distribution of both regular line and specialty products. It will be particularly interested in working closely with producers and compounders of insecticides, fungicides and herbicides.

Talk at Safety Congress

Dr. George E. Gould, entomologist at the Purdue Agricultural Experiment Station, Lafayette, Ind., presented a paper, "Insect Infestations in Food Plants," before a conference of the National Safety Council's food section, during the National Safety Congress in Chicago, recently. Another speaker at the food section's meeting was Milton Caroline of the U. S. Fish and Wildlife Service, stationed at the Purdue experiment station. "Control of Rat Infestations in Food Plants" was the subject of his talk.

Ill. PCO's Form Assn.

Organization of the Illinois Pest Control Association was completed recently, when a large group of Chicago and down-state exterminators gathered at the LaSalle Hotel, Chicago, to officially ratify a constitution, adopt by-laws and elect officers.

Stanley L. Lind of American Laboratories, Chicago, was chosen president of the new association, with other officers, all from Chicago, as follows: Vice-president, Joseph De Fiore, Globe Exterminating Service; secretary, Earl A. Anderson, Anderson Exterminating Service; treasurer, Charles O'Hara, Monroe Laboratories, Inc. A board of directors, also elected, includes James J. McDaniel, International Exterminating Co., to serve two years; W. W. Windmeier, Airway Exterminating Co., one year; and George R. Chambers, Continental Chemiste Corp., one year.

Efforts to organize Illino's P.C.O.'s had been attempted off and on for a number of years. Early last July Chicago operators formed the "Pest Control Association of Greater Chicago," later deciding to reorganize on a state-wide basis, a purpose which was achieved at the recent gathering. A program of service to members and to the industry is to be developed, it was announced, which will promote the mutual interests of all pest control operators throughout Illinois.

NSSA Space Sold Out

Exhibit space for the National Sanitary Supply Association's trade show, May 8 to 11, 1949, is completely sold out, Leo J. Kelly, executive vice-president, announced recently. The 1949 show will be held at the Hotel Sherman, Chicago, with all displays to be on one floor.

In a mail vote to determine the site of the 1950 show, Chicago was favored by a predominant lead, Mr. Kelly reported recently, trailed by Philadelphia, New Orleans, Denver,

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Cleveland and Kansas City, in that order. Affairs at N.S.S.A.'s Chicago headquarters had to be conducted by phone for a time recently, while Mr. Kelly was hospitalized for an operation and then a period of recuperation in his home. He is now back on the job.

Goldberg Forms Own Co.

Melvin Goldberg, for the past three years associated with Geigy Co., New York, and prior to that with the Insecticide and Fungicide Unit, Chemicals Bureau of the War Production Board, recently announced the establishment of his own company, Pesticide Advisory Service. The new firm will specialize in the sale of chemicals to the insecticide, disinfectant, herbicide and related fields. In addition, the concern will engage in market surveys and do consulting work for manufacturers of chemicals and related materials in these fields.

The offices of the new organizatios, located at 37 Wall Street, New York, were opened Dec. 1.

Mr. Goldberg is a graduate chemist, having received an A.B. degree from Johns Hopkins University. He received his Master's degree from Georgetown University. Prior to his work with the War Production Board during World War II, he was employed by various government research organizations including the Bureau of Animal Industry and the National Institute of Health. During the latter part of his work with the W.P.B., he served as chief of the Insecticide and Fungicide Unit.

N. Y. Insecticide Conference

Application equipment and materials—results and recommendations—were the main topics of discussion at the tenth annual New York State Insecticide and Fungicide Conference held at Cornell University, Ithaca, N. Y., Nov. 10-12.

Increase DDT Price

A change in the carload price of DDT, technical grade, from 34 cents to 36 cents per pound was recently announced by the E. I. du Pont de Nemours & Co., Wilmington.

O-Cedar Redesigns Labels

O-Cedar Corp., Chicago, recently announced completion of a program to entirely redesign all of the packages in its line of cleaners, waxes, polishes and related items. As part of the program a new trade mark device was developed. The aim of the program is to establish a strong family resemblance in the packaging of the entire O-Cedar line. The actual work of redesigning the packages was done by the Raymond Loewy organization of New York. Besides redesigning the line, the Loewy organization did considerable investigation and research work particularly in the retail field to get dealer and consumer reaction Others participating in the program were the research department of Young & Rubicam, Inc., New York advertising agency for O-Cedar, Color Research Institute of Chicago, for suggestions as to color and design, and The Olsen-Williams Commercial Art Studio, who produced some of the full color art work.

The new basic color scheme for the label design is gray, red and white. Other complementary and harmonious colors are incorporated in some of the label and carton designs. The trademark device ties all the new label designs and packages together.

As an adjunct of the packaging program, O-Cedar has developed the "floor merchandiser," which is a small, portable stand or rack especially designed for displays of O-Cedar waxes, polishes, cleaners and floor mops.

Bottles and jars for packaging the redesigned O-Cedar line were supplied by Owens-Illinois Glass Co.

Pennsalt Ups BHC Output

Pennsylvania Salt Manufacturing Co., Philadelphia, announced last month that it was making available in larger quantities its high gamma content benzene hexachloride.

Wisconsin Research Foundation New Laboratory

A NEW insecticide laboratory providing testing services for insecticide and allied products was completed recently by the Wisconsin Alumni Research Foundation, Madison, Wis. Activities of the laboratory include the evaluation of insecticidal and spray materials, screening of unknown compounds, study of toxicity in warm blooded animals and the chemical determination of potential insecticides, fungicides and bactericides.

Household fly sprays containing toxicants in insecticidal base oils are evaluated biologically by means of the settling mist method. Other biological evaluations of the laboratory include the testing of cockroach dusts and sprays as well as dry household insecticidal dusts. Facilities also are available for the evaluation of residual sprays, and moth-proofing compounds for fabrics. A modified Peet-Grady chamber is used for the evaluation of aerosol insecticide dispensers.

Services in testing the compatibility of insecticides with other chemicals are another important function performed by Foundation research men. Stability tests on formulations with respect to age, light and temperature also are conducted.

A series of preliminary tests is currently being offered by the Foundation for the appraisal of unknown compounds for potential insecticidal activity. In these tests it is ascertained whether the compound has specific toxic properties on one or more of the screening insects used. The concentration rate of toxicants to one or more test insects is evaluated. In more detailed studies, tests are performed to determine whether the toxicant is a stomach, respiratory, or contact poison.

In the animal rooms of the Foundation laboratories, facilities are available for toxicological studies of insecticides and rodenticides on warm blooded animals. In general, such tests include observations on the effects of the toxicant when administered orally, intravenously and intraperitoneally, or when applied to shaved areas for skin penetration or irritation tests.

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Buffalo Kay Moves Into Own Remodelled Building

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COMPLETE SANITATION—INDUSTRIAL MAINTENANCE PRODUCTS—SERVICE
BUFFALO KAY CHEMICAL CO. INC.
215 Member National Sanitation Supply Association 215

Above: New headquarters of Buffalo Kay Chemical Co., Buffalo, N. Y. The firm spent over $25,000 remodelling the 50 x 160 foot building.

A "HOUSE warming" party attended by 700 people marked the official opening recently of the new headquarters of Buffalo Kay Chemical Co. at 215 Ellicott St., Buffalo, N. Y. Having outgrown its former quarters at 1200 Niagara St., the nine-year-old company purchased the two-story building it now occupies. More than $25,000 was spent on remodelling and modernizing the 50 by 160 foot structure, which houses a spacious general office, a large conference room, several private offices, showroom and warehouse space. Buffalo Kay Chemical Co. also has a branch in Niagara Falls, N. Y. The company stocks over 260 classifications of sanitation and maintenance products including soaps, insecticides, disinfectants, soap dispensers, floor waxes, polishes, compounds, wax applicators, floor scrubbing machines, brooms, weed killers and related sanitary chemical specialty items.

In a full page advertisement in the *Buffalo Evening News*, the company, which was incorporated two years ago, ran photographs of the exterior and interior of its new quarters. Products made and sold by the company were listed and services offered were described. In addition, pictures of members of the sales, service and office staff were shown.

An innovation in the services performed by the firm, whose volume runs into six figures making it one of the fastest growing and possibly the largest sanitary supply firm in the areas, is its monthly lavatory service performed free of charge for companies using Kay products. The cleaning, deodorizing and disinfecting is performed by company service men.

Officers of the company include: Philip G. Kaye, president; Rose D. Kaye, vice-president and Edward M. Kaye, secretary-treasurer. Jack Lavelle is sales manager and is assisted in the company's six sales territories in Western New York by the following representatives: Dick Campbell, Joe Stoeckl, Paul McCarthy, Frank Bellisimo, Tom Hesketh and Joe Ferguson. Louis Huebbers handles service.

Join Pennsalt Research

The appointment of Hyman Iserson and Maurice E. Miville as research chemists at its Whitemarsh Research Laboratories was announced recently by Pennsylvania Salt Manufacturing Co., Philadelphia. Mr. Iserson, a graduate of City College of New York, was formerly with Frankford Arsenal and Rohm and Haas Co., Philadelphia, where he was a research chemist. Mr. Miville was formerly with Celanese Corporation of America. He is a graduate chemist, having received his Bachelor's degree in chemistry from New Hampshire U.

Harry Kerstein Dies

Harry Kernstein, 50, owner and operator of Advanced Exterminating Service, Chicago, died Oct. 31. A member of the National Pest Control Association, he had operated his firm for more than 20 years. He is survived by his wife and daughter.

Form Chipola Chemical Co.

The formation of a new company, Chipola Chemical Co., Marianna, Fla., to manufacture building maintenance chemicals, insecticides and fungicides, was announced recently by W. H. Harrison, president. Other officers include G. A. Jenkins, vice-president and D. D. Bevis, secretary and treasurer. L. E. Johnson and W. B. Reddock are directors of the firm, which will serve the entire southeastern area of the United States. Chipola Chemical Co. has a factory 50 by 100 feet, with warehouse space ample for the first year of business. The factory is located on a site covering four acres.

N.S.S.A. Group Meets

Members of the National Sanitary Supply Association located in and around St. Louis, Mo., held an enthusiastic "get acquainted" meeting at the Hotel Mayfair, St. Louis, Nov. 4. Plans were laid for further social meetings and for closer cooperation with the national organization in its program to promote the good of the industry. Charles Buschart of U-San-O Corp., St. Louis, was chairman of the evening's program..

Toronto Firm Moves

Trojan Chemical Co. and Aerocide Sales Co. recently moved to larger quarters at 24 Ryerson Ave., Toronto, Canada, it was announced last month by Stanley E. Spring, general manager.

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Sales,—Topic for N. Y. Sanitary Supply Meeting

MAJOR emphasis of the program for the third eastern regional conference of the National Sanitary Supply Association, Dec. 9-10, at the Park Central Hotel, New York, is to be on sales. Other program highlights include a symposium on floor maintenance and a basic discussion of the quaternary ammonium type disinfectants. The meeting opens officially Thursday morning at 11:00 a.m. with registration. Discussion sessions begin at 2:00 p.m. in the Tower Room, where Jack Gantz of Empire Brush Works, Port Chester, N. Y., and eastern regional vice-president of the N.S.S.A. gives the address of welcome. He is to be followed by F. K. Doscher, vice-president in charge of sales, Lily Tulip Cup Corp., New York, who is scheduled to speak on "The Dynamics of Sales Leadership." At 3:00 p.m., a panel discussion on Floor Maintenance is scheduled. Participating in the discussion will be Jack Kahn of Windsor Wax Co., Hoboken, N. J.; C. F. Bingham, Chemical Manufacturing & Distributing Co., Easton, Pa., and two others, one from a wax manufacturing firm and another from a floor seal and compound producing company. The final feature of the first afternoon is to be a talk by B. A. Kollmer, service engineer for the New York Telephone Co., who will discuss techniques of telephone selling. He will illustrate his talk with a sound film, "Telephone Courtesy."

A cocktail party in the Chinese Room at 6:00 p.m. will precede the annual banquet and entertainment beginning at 7:00 p.m.. in the Coconut Grove. Jess Keppler, Keppler Brothers, New York, is chairman of the entertainment committee.

The Friday morning session, final one of the meeting, concludes with a group luncheon at 12:30 p. m., to be addressed by Al Schacht, baseball humorist. First speaker on Friday is Dr. R. G. Sherwood of Winthrop-Stearns, Inc., New York, who will discuss "Sanitizing with Quaternary Ammonium Compounds." Dr. Sherwood is expected to sketch in some of the background of the quaternaries, the types used, indicate where they are employed and also discuss briefly local health ordinances relating to quaternary type sanitizers.

Morris I. Pickus, president of Personnel Institute, Inc., New York, the next speaker, giving the second sales talk of the meeting, will tell, "How to Win an Argument without Arguing."

Leo J. Kelly, executive vice-president of the National Sanitary Supply Association, will conclude the meeting with a brief discussion of Association affairs.

Lee Fried of Enterprise Paper Corp., New York, is chairman of the program committee for the meeting.

N.Y. NSSA Group Meets

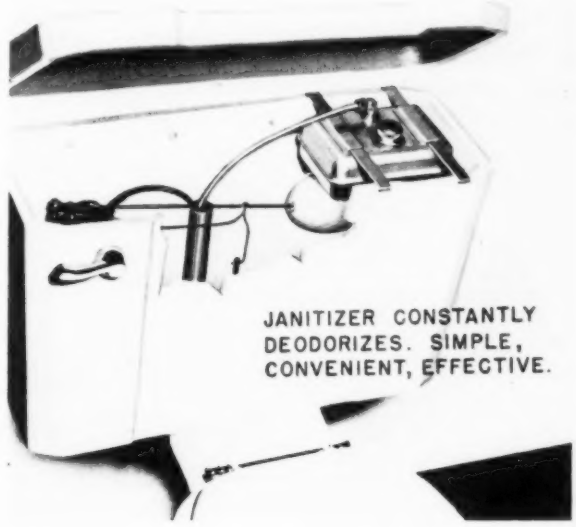
About 60 persons attended the second monthly dinner meeting of the New York and Vicinity group of the National Sanitary Supply Association, held Nov. 18, at the Fifth Avenue Hotel, New York. Richard Sanso of Dun & Bradstreet, Inc., New York, was guest speaker, reviewing the "Trend in Business Now and the Shape of Things to Come." Jack Gantz of Empire Brush Co., Port Chester, N. Y., and eastern regional vice-president of the National Sanitary Supply Association, also spoke and told of the coming third annual regional meeting of the N.S.S.A. to be held in New York Dec. 9-10. Bernard M. Siegel, Bernhardt Brothers, Inc., Brooklyn, was chairman of the meeting. It was voted at the meeting to appoint a committee to determine what type of meetings should be conducted and how often.

Gain Succeeds Lawrence

John F. Gain, Jr., formerly assistant, was recently appointed head of the bacteriological control department of Winthrop-Stearns, Inc., Rensselaer, N. Y. He succeeds Dr. Carl A. Lawrence, who resigned to join the department of medical bacteriology of the University of Michigan, where he will teach and do research. Mr. Gain is a graduate of Union College and has been with Winthrop-Stearns since July, 1946. Previously he had been a bacteriologist in the public health laboratory of the State of New York. Later, he entered the Army, serving from 1942 until 1946. He was discharged as a captain in the Sanitary Corps.

Southern Chemical Expands

Southern Chemical Co., Memphis, Tenn., recently announced the opening of new quarters at 784 Mississippi St. The new air conditioned quarters of this janitor supply firm consists of a brick and steel office building and new warehouse. The firm was formerly located at 207 Linden St. Harry C. Bresler is the head of the company which was started 15 years ago.



"Janitizer" a new device for deodorizing cabinet toilets is being introduced by General Scientific Equipment Co., Philadelphia. A perfumed liquid drips steadily from an overflow pipe into the bowl.

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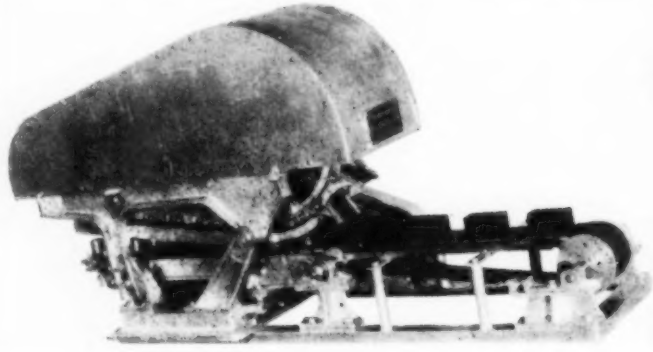

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Prof. Exterminators Dine

The annual dinner of the Professional Exterminators' Association, New York, was held Dec. 3, at the Hotel Embassy, New York. At its asannual meeting, Nov. 12, at the Hotel McAlpin, New York, the group elected Jacob L. Huberman of Scientific Exterminating Co., Bronx, as president. He was formerly vice-president. Other officers include: David Cantor, Bell Exterminating Co., New York, vice-president; William Farrell, Effective Exterminating Co., Bronx, re-elected as trasurer; Mrs. Ethel T. Thorpe, who continues as secretary. The board is now composed of Milford H. Oachs, Ozane Exterminating Co., New York, chairman; Joseph Finneman, Pest Control Corp., New York; John Gols, Metropolitan Vermin Exterminating Co., Flushing; Alfred Friedman, Friedman's Exterminating Service, Bronx, and Irving Drucker, Banex Exterminating Co., Bronx.

New Monsanto Disinfectant

"Santophen 1," a new germicide in dry, non-dusting, flaked solid form that is said to be effective against both fungi and bacteria was announced recently by Monsanto Chemical Co., St. Louis. The new chemical, a substituted phenol, claimed by the company to be relatively nontoxic to higher animals, is non irritating in usage dilutions, it was shown in standard skin patch tests. The new germicide shows phenol coefficients in the order of 150 to 200 against standard test organisms, and kills fungi in concentrations of .005 percent to .05 percent. A nearly colorless compound, "Santophen 1" is not a mixture of isomers, and thus its properties are dependable and predictable, the company points out.

Article on Certified

Certified Products Co., Birmingham, Ala., distributors of janitor supplies and equipment, floor maintenance materials, industrial chemicals and related sanitary chemical specialties, was recently the subject of a feature article in a Birmingham newspaper. In addition to describing the company's activities, products and distribution set-up, a photograph of the plant and its manager and co-owner, Jerome C. Ard, appears with the article.

Last month in a story dealing with the awarding of the Nobel prize in medicine to Dr. Paul Mueller of Geigy Co., above, we inadvertently ran a cut of Dr. Harold J. Miller of Pennsylvania Salt Manufacturing Co. In our haste to get a picture of Dr. Mueller into the magazine we missed the boat rather badly. To both men we apologize for any embarrassment that may have been caused.

Develops New Deodorizer

The development and successful testing of a harmless liquid called "Metazene" which will deodorize homes almost instantly was announced recently by Dr. L. B. Kilgore, Washington, D. C. Although it has not yet been released to the general public, Dr. Kilgore said it has been tested successfully in hospitals, institutions, mortuaries and laboratories.

Dr. Kilgore worked with the Army and Navy during the war to produce better insecticides, and was one of four specialists sent to Germany after hostilities to compile an official report on new German insecticides,

Roth Joins Bocon

Bocon Chemical Corp., New York, announced recently that Philip B. Roth, formerly on the research staff of Aspinook Corp., has been appointed director of technical development. He will correlate the application of Bocon's mothproofing compound at the woolen mills with laboratory research and development.

Difco Buffer Solution

Difco Laboratories, Detroit, are reported recently to have developed in dehydrated powder form a neutralizing buffer solution for swab testing quaternary ammonium type disinfectants. The powder, which contains "Asolectin" and sodium thiosulfate, is simply added to distilled water. Difco has also developed a similar type dehydrated agar suitable for slant vials to be employed in the visualization of the bacterial population of dishes, glasses, etc., in accord with the procedure used by Dr. Gunderson at Rockford, Ill. Users report that the visual method very closely parallels the actual count findings. In addition, a great deal of laboratory work is said to be done away with. The method is also recommended for inspectors covering State areas, not having direct access to a laboratory for count determination.

Fair Traders Hear Schafer

Harold Schafer, president, and John A. Goepper, New York regional director of sales, Gold Seal Co., Bismarck, N. D., were among the speakers at the annual meeting of the American Fair Trade Council, held at the Waldorf-Astoria Hotel, New York, Nov. 18. Mr. Schafer spoke on the subject: "How Fair Trade Helped 'Glass Wax.'" In his talk, Mr. Schafer told the story of how he became interested in "Glass Wax," which is made for his firm by R. M. Hollingshead Corp., Camden, N. J.

Mildewproofing Method

A new process for mildewproofing linens was announced recently by Monsanto Chemical Co., St. Louis. The new method, a modification of an older process for fire-proofing textiles, was developed in cooperation with Morgan Linen Service Co. and is said to be relatively inexpensive. It can be easily adapted to normal commercial laundry washing procedures. Basis of the treatment is a concentrated solution of sodium pentachlorophene, a water soluble fungicide sold under the trade name "Santobrite." Clothes to be treated are rinsed in the solution for five mintes.

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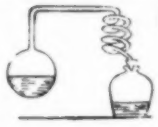

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